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PRACTICAL ILLUSTRATIONS

OF

TYPHUS FEVER,

AND

FEBRILE AND INFLAMMATORY

DISEASES.

JOHN ARMSTRONG, M. D.

SECOND EDITION.

LONDON:

PRINTED FOR BALDWIN, CRADOCK AND JOY.

1819.

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PRACTICAL ILLUSTRATIONS

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TYPHUS FEVER,

AND OTHER

FEBRILE AND INFLAMMATORY DISEASES.

BY

JOHN ARMSTRONG, M. D.

Human experience, which is constantly contradicting theory, is the great test of truth. DR. SAMUEL JOHNSON.

SECOND EDITION.

LONDON:

PRINTED FOR BALDWIN, CRADOCK, AND JOY.

1818.

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TO

JOHN RALPH FENWICK, M. D.

OF DURHAM.

My dear Sir,

Knowing no individual who unites in his character more talent and benevolence than yourself, I inscribe this volume to you, as a token of my sincere respect and esteem.

Believe me to remain, dear Sir,

Your much obliged and faithful friend,

July 31*st*, 1816. JOHN ARMSTRONG.

PREFACE TO THE FIRST EDITION.

THE mind which has been exclusively directed to the investigation of a favorite science, is unwilling to persuade itself that its powers, however feeble, have been concentrated in vain; since the faintest rays, when collected into a focus, can produce some degree of illumination. It was an impression of this kind which first led me to think of publishing the results of my experience; and the present volume is a part of the series of commentaries on acute diseases, promised at the publication of some facts concerning the puerperal fever. During an extended practice of many years, my views, with respect to the treatment of febrile affections in general, have undergone gradual and at length great

changes; and it is hoped, that an impartial exhibition of the causes, nature, and object of those changes may not be wholly useless.

No disease is here brought forward, with the exception of the plague, but what has repeatedly fallen under my observation; and typhus has been made the foundation for most of the principles attempted to be established. If the materials of this work should prove to have been carefully selected, the practical observer will probably excuse some deviations from the common modes of arrangement: for, to confess the truth, it did not suit me to follow any plan which had been previously laid down; and I found it difficult to form one better fitted to exhibit my conceptions than that which is adopted.

Some of the methods of cure, recommended in the following pages, differ from those taught by certain medical professors and lecturers; but whatever regard I may entertain towards men justly eminent for their rank and acquirements, I am morally bound to maintain what experience has

shewn me to be efficacious, how much soever it may oppose prevailing opinions. Now and then I have felt it a duty pointedly to dissent from the doctrine of some noted authors, because error is always most dangerous when sanctioned by a celebrated name; yet fully sensible of their general superiority, it has been my aim to mingle respect with animadversion. So far as recollection or extracts could assist, acknowledgments have been made for the thoughts really suggested by the perusal of other works; and therefore if any omissions be discovered, they ought to be imputed to forgetfulness alone. At the same time, it must be remembered, that medical inquirers may make similar observations respecting diseases, without being at all indebted to each other; as distant and unacquainted astronomers may, by their telescopes, discover similar phenomena.

PREFACE TO THE SECOND EDITION.

THE subject of typhus fever has acquired an additional interest since the publication of the first edition of this work; for that disease has unquestionably prevailed more than usual in many places of the united kingdom. The principles and practices formerly advanced were the result of long and patient inquiry, and as subsequent observation has only confirmed them the more strongly, they remain unaltered in this edition, which has nevertheless been revised with care, and much extended in some parts. It has afforded me great pleasure to find, from various quarters, that the illustrations given have been ascertained to be practically beneficial; but it has been especially gratifying to me, that my attempts seem to have elucidated, in some

degree, the nature and treatment of venous congestions, respecting which the most erroneous notions had previously been propagated in various treatises. Most of the ancient and modern writers on fevers attach the highest importance to the hot stage, and indeed not unfrequently overlook many of the pathological peculiarities of the cold or primary stage: yet the renewed observations of every day, as well as reflections upon past occurrences, more firmly convince me of the necessity of minutely attending to the obscure stage of oppression, which generally ushers in the attack; and if I were now called upon to give one caution of more consequence than the rest it would be this, that practitioners should if possible, mitigate or remove the symptoms of the first or chilly stage, as the very elements of disease are then formed from internal accumulations of blood. Many lives, I am positively certain, are yearly lost from patients or practitioners disregarding the primary signs of indisposition, under an idea that they proceed from a slight cold, or some similar cause of no importance; and thus very often the venous congestions are allowed insidiously to sap the foundation of

the vital parts within, until the case become irremediable from delay. A sense of duty will not permit me to close this preface without expressing my acknowledgments for the marks of confidence and kindness which I have received from professional men generally since the first publication of this work; and if their good opinion in future can be maintained by the devoted labour of years to the cultivation of medical science, that labour shall not be spared.

38, Great James Street, Bedford Row,
London, April 10th, 1818.

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ERRATA.

Page 161, line 18, *for* depletion *read* dissection.
—— 166, —— 25, *for* distinctions *read* disserations.
—— 171, —— 30, *for* this *read* their.
—— 176, —— 10, *for* repaid *read* repaired.
—— 226, —— 16, *for* demands *read* demand.

PRACTICAL ILLUSTRATIONS

OF

TYPHUS FEVER,

AND OF OTHER

FEBRILE DISEASES.

INTRODUCTION.

Numerous theories have been formed to explain the nature of fevers, but the history of medicine proves, that none have been so constituted as to remain permanent. At different periods, by accident, genius, or diligence, many discoveries were made, which opposed the prevailing doctrines of the day, or for which those doctrines could not satisfactorily account. By the investigations which such occurrences naturally produced, the most elaborate theories, time after time, have been overthrown, and others, supposed to extend to a greater

number of appearances, successively advanced, which in their turn have also fallen before the progressive improvements of the medical art. And as men in general are more fond of pursuing abstract inquiries than collecting and arranging matters of fact, it is likely, that some authors will continue to erect, and others to demolish systems, until the desirable period, should it ever arrive, when general principles shall be as firmly established in physic, as in the more perfect sciences. The most celebrated of modern theories, like those of preceding ages, have been drawn from partial or imperfect views, and are more or less fallacious when tried by experiment. It is, therefore, my intention in treating of fevers to adhere, as closely as the nature of the subject will admit, to the consideration of their phenomena and effects; and to endeavour from these, together with the known powers of remedial agents, finally to deduce some special principles of treatment, capable of considerable extension.

The term fever has been used comprehensively to express a whole class of diseases, and limitedly to express some of the specific affections of that class; and it has also been employed in an abstract sense, denoting the combinations of febrile phenomena, without signifying any particular fever. One set of authors has arranged under this term every disease attended with increased arterial action and increased heat; while another set has restricted it to those

febrile disorders, which have been supposed to be independent of all local affection, and on this account called idiopathic. Nor is it uncommon to see it used as an abstract term in the medical publications of the day, as if fever were some peculiar and subtile essence, and the concourse of attendant symptoms mere accidental appendages. But as the disorder of the constitution designated fever, has always appeared to me as the result or the sign of some antecedent change in the system, howsoever induced, an extended though a definite signification of that term will be preferred in the following pages. The pyrexiæ of nosologists shall, therefore, be considered as a class in which three orders are comprehended; two orders in which the causes are specific though at the same time essentially different, and one order in which the causes are not specific but common. The first order comprehends fevers proceeding from contagions, the second fevers proceeding from marsh and similar miasmata, the third fevers proceeding from the vicissitudes of the weather and other ordinary causes. It must be manifest, that the first order admits of a subordinate division, since some of its varieties only affect the same individual once, while he may be repeatedly affected by others; but still all the varieties of this order are distinguished in arising from, and propagating themselves by peculiar contagions. The second order is characterized by exclusively deriving its origin from marsh and similar miasmata: its species certainly do

not necessarily possess the power of disseminating themselves by any inherent quality; and in this they differ from the varieties of the first class, while the nature of their origin marks them from those of the third and last. The third order embraces all those fevers which proceed from the general impression of heat or cold, from local irritations or inflammations, or from any cause not having the special properties of contagion or of marsh effluvium; under this order, therefore, all symptomatic fevers naturally fall, although some of its varieties arise out of an universal impression on the system, the force of which is finally spent upon those parts which had previously been disposed to disease.

It may perhaps be asked, in objection to this arrangement, that if we do not class diseases by a reference to the similarity or discrepancy of the pathognomonic symptoms, shall we be safer in founding our arrangements on their causes, some of which may rather be conjectured than positively ascertained? Certainly if theory be allowed to influence our arrangement, it ought to be theory successfully investigated and established by observation. As it has not been *proved* that every contagious fever is in every instance produced by a specific contagion, and as considerable obscurity still hangs over the subject of marsh effluvia, it probably might have been quite as satisfactory, if the classification of fevers had been directed, rather by their phenomena than by their

known or supposed origin. But the arrangement here chosen, however defective it may be, presents some great pathological outlines, which I have not been able to find in any other; yet it is not my design to limit myself to them throughout, but to abandon them whenever they may be likely to lead from any point of practical importance, or whenever a favorable opportunity offers for illustrating diseases which have an analogy to those most particularly considered. Whatever may be the advantages of methodical arrangements in medical pursuits, I am chiefly anxious that my views on specific and determinate subjects should be clear and comprehensive; and if I can but accomplish this, shall be content to leave, for the present, the general conceptions which relate to nosology as things only of secondary regard. How various soever the causes of fevers may be, their great and most important effects upon the vital organs are nearly the same. These effects shall be made conspicuous in the following pages, so that the reader may consider them among the leading objects of the work; and in concluding the series of illustrations, an attempt will be made to reduce the pathology and treatment of all acute fevers to a few plain principles. The nature of my plan having been thus premised, several diseases, referrible to one or other of the above orders, shall be successively examined.

TYPHUS FEVER.

It is probable, that the disease now called typhus existed from a remote period, though it appears not to have been distinctly described and characterized, as an infectious complaint of its own kind, until about the beginning of the eighteenth century. Since that time, however, various works have appeared, and thrown considerable light upon this interesting distemper. Yet it must be confessed, that the term typhus is still used in medical writings, but more particularly in medical speech, far too indiscriminately. Instead of being solely confined to the individual disease in question, it is made to include a great variety of widely different affections; especially when in their course, the concomitant fever puts on a low or putrid type, as frequently happens in the last stages of many inflammatory diseases of the external and internal textures. It strikes me, that to call any species of fever typhous, which has not the contagious essence capable of producing an unequivocal typhus, is equally incorrect in logic as in language. In this essay, therefore, the word typhus shall be limited to the peculiar disease, so well known

in this country, which is allowed to originate from a specific contagion, and which, doubtless, has the power of producing an affection of its own nature, in individuals exposed to its influence.

The word typhus is still too generally associated with the opinion, that the fever, which it properly designates, is in all its stages a disease of real debility; but this notion has either been taken on the word of those authorities, who for a time gave the tone to medical opinions and theories, or it has been impressed upon the minds of those who entertain it, from a contemplation of the disorder wholly limited to its advanced periods. An extensive observation, however, during a series of years, has convinced me, that the genuine typhus, so far from being of an asthenic nature, is most certainly an affection of excitement or of congestion, in its first stages, demanding at such times the decidedly evacuant plan. Entertaining these sentiments, the professional reader will perhaps excuse their brief annunciation in entering on the subject; as they may contribute to warn him against the undue influence of some early associations, and thus incline him to give a fair and full hearing to the facts and arguments about to be adduced.

Typhus is unquestionably most prevalent in cold or temperate climates. It would indeed appear, from an author of great research, that this disease had probably not occurred on either side of the Indian

peninsula ; * though it is universally known, that the warmth of tropical regions is most congenial to the generation of those effluvia, which produce the remittent yellow fever. Nevertheless, I have known practical men who were confident that the contagion of typhus occasionally exists in some hot countries ; but they seemed to consider, as Sir Gilbert Blane long since asserted, that there is something in those countries unfavourable to its production and continuance. In England typhus is evidently favoured by a low temperature, being most prevalent in the cold seasons of winter and spring, generally abating or disappearing, as the heat of summer advances, and often prevailing to a considerable degree in cold wet autumns. In a number of persons exposed to the contagion of typhus, some though rarely are attacked as early as the first or second day, and others even after the thirtieth ; but perhaps the most common periods of sickening after exposure are, from the end of the first, to the middle of the third week. It has been affirmed, that it follows at so great a distance as the ninth or tenth week after exposure, but this seems very questionable. If an author is persuaded, that there must be specific contagion as the source of every fever resembling typhus, he will undoubtedly go far to seek for it. When this disease once prevails, it

* See page 510 of an Essay on the Disease called Yellow Fever, with Observations concerning Febrile Contagion, Typhus Fever, Dysentery, and the Plague. By Edward Nathaniel Bancroft, M. D. London: printed for T. Cadell and W. Davies, Strand. 1811.

generally assumes different forms, which may, however, be arranged under three varieties, namely, the simple, the inflammatory, and the congestive typhus. These three varieties shall first be concisely characterized, and afterwards separately examined, in order to illustrate the rules of treatment fitted for each.

In strict propriety of language, typhus can only be denominated simple in a relative sense. It is, in reality, the least complicated form of the disease, in which the febrile excitement, or hot stage, is completely developed, and in which there are no decided marks of topical inflammation. The inflammatory typhus has the same open characters of general excitement as the simple ; but with these are conjoined symptoms of some visceral inflammation. The congestive typhus is distinguished by the hot stage not being at all, or only imperfectly developed, and by simultaneous signs of congestion in one or more of the internal organs.

THE SIMPLE TYPHUS.

The simple typhus has a first stage of oppression, a second of excitement, and a third of collapse. These successive stages, but more particularly the two last, bear a pretty exact ratio to each other, as to degree, but not as to duration. The stage of oppression is usually marked by a variety of symptoms,

among which the following are mostly conspicuous. Paleness of the face; a peculiar look of dejection and weariness; some degree of darkness or livor in the integuments surrounding the eyes; prostration of strength; diminution of mental energy, and of sensibility; cold creeping sensations on the surface, or short hot and chilly fits alternately; loathing of food, nausea, or vomiting, whitish or clammy tongue; sense of weight or anxiety about the præcordia; occasional sighing, and hurried breathing; aching, heaviness, or giddiness of the head; coldness of the back, and pain of the loins; a quick, low, struggling pulse, changeable as to frequency, and even irregular as to force. These symptoms are accompanied with feelings of general uneasiness, somewhat resembling those which are experienced after a long journey, or any other great fatigue. The stage above described sometimes comes on and reveals itself with rapidity; but generally it is more insidious in its approaches, and occupies, from first to last, a period of two or three days; when, after various irregular demonstrations of re-action, it is succeeded by the second stage, or that of excitement, in which there is a complete developement of the fever. The tone and velocity of the circulation are now preternaturally increased, and the pulse accordingly becomes comparatively expansive, thrilly, and resisting; at least it is widely different from the variable, confined, inelastic pulse of the former stage, and from the uniform free, and smoothly flowing one of

health.* The cheeks are flushed; the eyes heavy; and the lips parched. The respiration is quick; the skin almost invariably dry; the heat universally diffused, and steadily above the common point; the tongue foul; the thirst urgent; the uneasiness in the head increased; the sensorium in a highly susceptible state—every symptom, in fine, denoting an excess of excitement. This second stage of the simple typhus naturally holds a tolerably even tenor for some time. As it proceeds, however, the brain, at intervals, is usually disturbed with revery, or slight delirium, coming on towards evening, when there is an exacerbation of the fever, and receding towards morning, when there is a remission; but the prostration of strength, which is at all times very evident, is generally greatest in the periods of the exacerbations. During the predominance of the excitement, the bowels for the most part have a tendency to constipation. The excretions as well as secretions also undergo gradual and material changes, which are

* Perhaps some may be inclined to doubt the correctness of numbering a preternaturally increased *tone* of the circulation among the most frequent symptoms of typhus. My own experience, however, fully authorizes me to do so, at least in the early periods of the simple form of the disease; and Dr. Ebenezer Gilchrist, one of the best and earliest writers on typhus, has mentioned in his tract, published in the fourth volume of the Edinburgh Medical Essays and Observations, that in many instances the pulse was full and strong. Huxham and several other authors might also be cited to prove, that this is often the case. But certainly the pulse alone is sometimes a very fallacious guide in this, as well as in the other varieties, as will afterwards be more particularly demonstrated.

evinced by the dark and offensive nature of the feces, by the peculiar odour of the breath and whole body, and by the morbid appearances exhibited on the tongue, in the fluids formed from the liver, from the kidneys, and from other organs of secretion.

After six or seven days, sooner or later, according to its mildness or severity, the stage of excitement gradually gives place to that of collapse, which is first announced by signs of depression in the voluntary powers; by a certain degree of relaxation in the skin; by a more variable and less concentrated state of the temperature; and by a notable diminution in the force of the circulation, the pulse being of less volume, softer, and more undulating. In the mildest cases, the approach of the stage of collapse may be viewed as an indication of convalescence. For although the patient may complain of much general weakness, and sometimes of soreness in the flesh, with flying pains or cramps in the extremities, yet the tongue will be found softer and cleaner, the thirst diminished, the pulse slower, the breathing deeper and less frequent, and the skin of a natural warmth as well as moisture. Besides, the functions of the stomach will be in some degree restored, with an evident improvement in the appearance of the feces, and in general with a lateritious sediment in the urine. Whereas, in the more marked instances of this sort of typhus, the supervention of the stage of collapse considerably augments the danger. The

prostration of strength then becomes far greater; the pulse is commonly quicker, and always much weaker; the tongue fouler, darker, and drier; the voice fainter, and the articulation less distinct; the respiration shorter, feebler, and more anxious. The sensorial functions too are more disordered; and the countenance is more dejected, sunk, and inanimate. Added to these symptoms, the skin feels looser, and appears more shrivelled, while the temperature is no where so intense as in the stage of excitement, but variable in the course of the day, even on the central parts: and there is an increase of general restlessness, a more perceptible and peculiar fetor about the body, and often an irritating species of cough, which comes, as it were, in convulsive fits. In this state, the patient is disposed to lie upon his back. As the peril increases, he not only labours under subsultus tendinum, visual deceptions, low muttering delirium, and difficulty of deglutition, but has also a tendency to slide downwards in the bed, and to draw up the feet frequently towards the body.

The foregoing description is intended to apply to the simple typhus, as it runs an unimpeded course; but between its slightest and its most marked forms, there are intermediate ones, whenever it extensively prevails. Some of the worst cases of it which I ever saw, existed in subjects who had been kept in a warm, close atmosphere; and some of the mildest, in those who had inhabited cool, airy apartments. When

properly treated from an early period, this variety of the disease generally terminates favorably; but when neglected or maltreated in the beginning, it frequently proves mortal: and when that is the case, dissection commonly reveals slight remains of irregular determinations of the sanguiferous system, in some of the viscera or their investing membranes. But whatever proofs of a previous over-excitement may be discovered, there is hardly ever any *visible* disorganization, at least my own anatomical investigations would lead me to draw this conclusion. Some writers have stated, that, on minute inspection of the bodies of patients who died in simple fever, no derangement whatever could be detected. Nevertheless I am inclined to think, that such occurrences are exceedingly rare; although it cannot be questioned that in some cases, as I have myself witnessed, the morbid appearances are not sufficient to account for the unfavorable issue; and we are almost compelled to infer, that it chiefly depended upon an actual exhaustion of the vital principle, induced by the preceding excitation. At the same time, however, I cannot help suspecting, that in almost every fatal instance of the simple typhus, there is really a degree of lesion in the structure of some vital organ. In the present state of our knowledge, there are perhaps many morbid changes, which elude the inquisition of the anatomist. In fact, until we are more thoroughly acquainted with the minutiæ in the natural organization of some deli-

cate and complicated parts, we cannot expect satisfactorily to detect those slender and latent lesions, upon which, in all probability, the suspension of function more frequently depends, than is usually conjectured. On more than one occasion, I have seen a patient sink in typhus, with all the common indications of an oppressed brain; and, on the most careful dissection of the part, nothing decidedly morbid could be discovered; yet all the circumstances of those cases, taken in conjunction, seemed almost to preclude the possibility of doubting, that the principal mischief had existed there. But such examinations ought to humble the pride of professional opinion, and to shew us the necessity of acquiring more minute information.

In the more marked examples of the simple typhus, the circulation is evidently disordered from the beginning of the stage of oppression: when the re-action has once taken place, the pulse continues to rise, unless timely controlled, in fulness and frequency through nearly the whole of the second stage; and its preternatural force can only be said to subside on the approach of the last stage. It cannot but be supposed, that this long continued tide of the fever, though it may leave no visible traces behind it, must make considerable impressions on certain organs of delicate structure; such as the brain for example, through which currents of blood must have repeatedly flowed with more velocity and in greater quan-

tities than natural. But in the mildest instances of this variety, it must be admitted, that no kind of organic lesion is produced, and they consequently end favorably; and in this they resemble the simplest intermittent, in which the morbid excitement of the circulation does not give rise to greater local determinations or accumulations of blood, than can be finally removed by the energies of the constitution alone, or by very gentle expedients of art. Almost all the larger viscera can sustain a certain degree of duration and congestion, without their structure being thereby at all impaired, or even their functions very greatly disordered. Many of the cases which Hippocrates has so minutely related in his epidemics were examples of simple excitement, and they terminated favorably by some spontaneous evacuation.

The characters of the simple typhus, it will be perceived, vary according to the time of its continuance; and, as some of those variations demand correspondent changes in the mode of treatment, it is hoped, that the attempt which has been made to point out the pathognomonic signs of each of the leading stages, will be found both correct and useful. For want of having carefully noted the different expressions, which this complaint puts on at different periods, some systematic writers have almost entirely overlooked many of the most essential parts of the first and second stages; and by having dwelt principally upon the last, contributed to support the

fallacious doctrine, that typhus is always a disease of real debility. There is, however, so wide a difference between apparent and real debility, that the practitioner, who would successfully conduct the treatment of febrile disorders, must attentively distinguish the one from the other. An opinion should seldom be formed wholly from external appearances, as they often mask the true character of fever, which for the most part can only be perfectly ascertained by penetrating beyond the exterior, and by inferring the state of the internal organs themselves. In matters of morality those men are constantly deceived, who judge of others from external appearances; and a similar conduct in the concerns of medicine often leads to the most serious mistakes of opinion and practice.

In the first stage of the simple typhus, the debility is merely apparent, and chiefly dependent upon the preternatural accumulations of blood in the vessels about the head, heart, liver, and other internal parts, while there is less circulating upon the surface of the body, than in a natural state. In the second stage, the debility is still only apparent, being then the consequence of over-excitement of the heart and arteries; but in the third and last stage, beyond all dispute, the debility is real, as it is then connected with a general collapse, which sooner or later succeeds to a state of febrile excitement, as certainly as exhaustion follows a fit of intoxication. Those who have

adopted the beautiful, but deceptive, doctrines of Dr. John Brown, will on no account admit, that the debility of typhus is only seeming, during the greater part of its progress. In candour, the impartial observer must confess, that this proposition is not evident at first sight; yet it is as certainly true as any in physic, as is proved from the debility in the first and second stages being increased by wine and cordials, and lessened by evacuations.

Soon after the attack of this fever, there is a peculiar depression of the mental and voluntary powers, which has been justly placed, by authors, among those symptoms, that most forcibly press themselves on the attention of practitioners, and of which patients most frequently complain. This peculiar depression has generally been thought to indicate, that the brain and nerves are primarily affected, as they constitute a medium, through which the mental and voluntary powers extensively operate. Accordingly we find, that several celebrated theorists, differing widely on subordinate points, agree in assuming, that typhus is a disease in which the energy of the nervous system is directly impaired. But, doubtless, far too much stress has been laid on this assumption—an assumption which, it is to be feared, has done considerable harm, by leading to the stimulant treatment, and by rather fixing the attention upon one train of symptoms, than directing it to a comprehensive view of the whole.

The general system comprehends within itself many subordinate systems, the proper functions of which must harmonize to form perfect health; and the constitution of our frame is such, that no one part of importance can be materially disordered without re-acting on other parts, which in their turn likewise give rise to a series of morbid actions—and thus the whole system is finally drawn into consent. Every limited theory of fever, therefore, must necessarily be erroneous, whether founded upon diminished nervous energy, or any other plausible hypothesis; since it must be apparent to every unbiassed individual, that almost all the organs and functions of the body are brought, in one way or other, under the influence of the disease. Yet if any particular system be more affected than another, it is unquestionably the sanguiferous, through which the *permanent* effects of fever are chiefly to be traced, and by which the state of the brain and nerves, at least, seem eventually regulated. Nay, if we consider the degrees of visceral congestion, which accompany the whole stage of oppression, we might perhaps find data for concluding, that most of nervous appearances, even from the very first attack, are only secondary of vascular disorder. So great indeed, in a practical point of view, is the importance of attending to the state of the circulation in febrile complaints, that guarding against determinations of blood to the different viscera, and removing preternatural accumulations, whether

congestive or inflammatory, when they actually take place, will be found to constitute one of the grand secrets of successful treatment.

It is not perhaps easy to distinguish simple excitement of the circulation from actual inflammation. Yet every experienced and unprejudiced practitioner will readily allow, that fevers do occur, in which there is a general increase of arterial action, without inflammation; as might be instanced in the disease of lying-in women called the weed, in the mildest forms of intermittents, and in several of the febrile affections of children. But what is the difference between simple excitement of the circulation and inflammation? The chief difference seems to consist, not in the state of the general circulation, but in that of particular parts. The action of the heart and larger arteries is alike augmented in both; but there is in inflammation a greater local afflux and accumulation of blood, than in simple excitement. Nevertheless topical determination of the blood arises in disorders of simple excitement; and we often see it spontaneously terminate, by what may be called pure resolution, but such a termination is comparatively rare in actual inflammation. Still it must be confessed, that the topical determination attendant on simple excitement, has generally a strong predisposition to inflammation; and may easily pass into the latter state, from the heart and larger arteries conti-

nuing to propel too much blood into the capillary branches.* In short, simple excitement of the circulation and inflammation have naturally an affinity, and may so mutually approximate as to be lost in each other. In simple excitement, the increased action is equably diffused throughout the system, in inflammation it is superabundant in particular parts. Yet even when the increased action is superabundant in any particular part, it must pass beyond a certain point before it can be strictly called inflammation; for we would not denominate the increased action of the intestines inflammatory, which is produced by a purgative, neither that of the skin which is produced by common rubefacients. And what is here asserted of local increased action, may also be asserted of general increased action; for in like manner we would not call inflammatory the general increased action which follows the drinking of a few glasses of wine. Yet if local and general increased action rise to a certain height, then that measure of arterial momentum is completed, which may be fairly called inflammation. Excitement, local as well as general, may exist without inflammation, but inflammation cannot exist without excitement.

* Is it probable that there is a greater loss of balance between the arteries and veins in inflammation, than in simple excitement of the circulation? The relations existing between the arteries and veins in health have been well explained; but it appears to me, that we have not been sufficiently attentive to the conditions, which relatively exist between these two systems of vessels in many acute and chronic diseases.

The state, then, of the circulation in the second stage of the simple typhus necessarily resembles inflammation; yet, in strictness, the organs most affected, by increased determinations of blood, may be said to be excited, rather than positively inflamed. Although, as shewn in the preceding pages, this stage may, and sometimes does, proceed without decided inflammation, yet as topical inflammation may arise during its existence, the medical attendant should never be too confident, that the disease will always continue to be one of simple excitement. On the contrary, he should be constantly upon his guard from the commencement; and, day after day, make the most scrupulous inquiries, that he may be enabled to detect, and, if possible, to arrest the very first appearances of inflammation supervening in a vital quarter. The pathology of the simple typhus is applicable to almost all the mildest forms of other fevers; for from whatever cause they may originate, or however they may differ in minor respects, the states of the vital organs will be nearly similar, if not the same.

It seems an acknowledged law of the animal economy, that when any part of the body is once put into a state of irritation, there is a greater flow of blood than natural in that direction. This law should always be remembered in typhus and similar fevers, which necessarily give rise to more than one local irritation at the same time. If opportunely attended to, simple irritation may generally be soon

removed, but if neglected in its origin, it may tend to produce not only an increased afflux of blood, but an actual inflammation, in some part. Since then from a variety of circumstances, typhus may, however simple in its outset, become connected with local inflammation, that modification of the complaint shall be next brought under the review of the reader.

THE INFLAMMATORY TYPHUS.

In pleurisy, and similar disorders, the seat of fever is always local, its effects general, and its nature inflammatory; but some ingenious authors, with Ploucquet and Clutterbuck at their head, seem to me to have proceeded too far, in asserting the same thing of what are called idiopathic fevers. As an example in point, typhus undoubtedly sometimes begins and terminates without topical inflammation; and as inflammation may occur in one or more parts, without ever producing an infectious distemper, with the true characteristics of typhus, it is evident, that inflammation is not its inseparable and essential constituent. When, therefore, this peculiar disease and inflammation are combined together, it appears only reasonable to conclude, that the latter may have been produced by cold, or any other common cause of fever, operating with the contagion; or that it may have arisen as an effect of the excitement of the heart and arteries, favored by some predisposition to in-

flammation in the part affected; as an inflammatory affection of the chest often arises in the measles, though each may exist independent of the other. Some authors have contended, that the inflammation, which accompanies the complicated forms of typhus, occurs with the fever, or even precedes it, and others, that it merely follows as a consequence of the general excitement. According to my observations, the local inflammation occasionally commences as soon as the fever itself, but generally arises during the stage of excitement; and hence, perhaps, it may be fairly inferred, that, for the most part, it stands in the relation of an effect, rather than a cause of the fever. If we reflect, that more or less visceral congestion attends the first stage, it will not seem improbable, that, by a preternatural distention of the vessels, it may leave a morbid tendency in some organ or other, which might pass into inflammation, by the excitement of the second stage. It usually happens in mere symptomatic fevers, that the inflammation is limited to one part in particular, but this does not so generally obtain in typhus: for though one organ may exhibit by far the strongest evidences of inflammation, some other part will often be affected on a less degree; and this surely favors the notion, that the topical disorders are commonly the products of general excitement. But the mode in which inflammation is produced in typhus, it is not so important to investigate, as at what time the inflammation takes place, what characters it assumes, and in what parts it is seated.

In viewing typhus always as a general disease, and deeming its seat, like that of the mind, unapproachable, some noted authors have neglected to investigate its effects on the viscera and their appendages; and of course, they have almost entirely overlooked those local affections, with which it is frequently connected, and which are generally the causes of its fatal termination. Some eminent pathologists, however, have of late forcibly called the attention of the faculty to the morbid anatomy of fever; and this subject seems now to be in a fair train of investigation, which promises not only to correct many prevalent errors of opinion and of practice, but eventually to lead to the establishment of general principles, in the treatment of all acute fevers.

In typhus, the brain, or its meninges, the lungs, pleura, mucous membrane of the trachea, stomach, liver, peritonæum, the small and large intestines, are the parts most liable to be attacked by an acute, or sub-acute form of inflammation. Correctly speaking, however, the acute and sub-acute forms of inflammation merely differ in degree; and, therefore, those relative terms are only meant to express the higher and lower degrees of the same morbid state. The propriety of making this distinction cannot be fairly disputed, since these different degrees of inflammation considerably vary the character and duration of the typhous cases, in which they happen to occur.

Though the sub-acute occasionally changes into the acute form of inflammation, and *vice versa*, yet each of these forms commonly begins and proceeds with its peculiar characters. The acute form generally arises on the first, second, or third day of the second stage, and being most active, is clearly denoted. Whereas, the sub-acute form usually arises after the third day of the second stage, and being less active, is at first obscure; so that the practitioner is for some time left to form his opinion, respecting its site and extent, rather from uneasiness in particular regions, and co-incident derangements in particular functions, than from violent pain, and other palpable symptoms, attendant on the acute form.

Whenever, after an attack of typhus, there is a distinctly felt and fixed pain in the head, chest, or abdomen, with great quickness of the pulse, dryness of the tongue, anxious breathing, and much general oppression,—the presence of the acute form of inflammation may be inferred. If there be little or no pain, and the pulse should become very frequent, the respiration more hurried, the tongue more parched and foul, and the general oppression greater,—the approach of the sub-acute form may be apprehended. But as these modifications of inflammation require correspondent differences of treatment, it is proper that they should be more particularly noticed.

So far as my remarks have extended, the brain and its investing membranes are more subject to inflammation in typhus, than any other parts of the system. When the acute form of inflammation exists within the head, it is generally marked by various signs. Great mental and corporeal irritability; an anxious, oppressed, or intoxicated cast of the countenance; dry, foul, tongue; quick, vibratory pulse; flushed, turgid face; * deep pulsating pain in the head; increased heat of the temples, forehead, and hairy scalp; throbbing of the carotid arteries; tinnitus aurium; redness, rolling, and morbid sensibility of the eyes; and more or less disorder in some other of the external senses. There are generally transient pains in the limbs; oppression of the præcordia; torpidity of the intestines; uneasy respiration, attended with heavy sighs; nausea, retching, or vomiting, augmented on motion; fretfulness and jactitation. Watchfulness, confusion of mind, visual illusions, and delirium, follow each other in quick succession. If the inflammation should uninterruptedly advance, to these symptoms succeed, indifference to surrounding objects; faultering or imperfection of the speech; gradually increasing stupor; bloatedness of the face; brown or black parched tongue; low mutterings; tremors of the hands; stupid, suf-

* In a few instances of this nature, I have known the face even paler than natural; the contrary, however, as stated above, is generally the case.

fused, watery eye ; squinting or dilitation of the pupil ; paralysis of one of the palpebræ ; vibices or petechiæ ; oozings of dark blood from the mouth and nostrils ; stertorous breathing, general convulsions ; relaxation of the sphincter muscles, and other mortal signs.

Recently I saw an old and corpulent lady laboring under typhus, in whom there was, from the beginning, an excessive determination of blood to the head, and an almost excessive sickness of the stomach. In defiance of every effort, the cephalic symptoms advanced : about the fourth day from the attack, she had a distinct stroke of hemiplegia, and became totally blind in the left eye, which was affected with strabismus. Shortly after the accession of the palsy, though she had previously been afflicted with great intellectual disorder, she became perfectly collected, and continued so for several hours ; when she gradually sunk into a state of collapse and of coma, and at last expired in strong convulsions.

When the brain is early and actively enflamed, typhus sometimes passes on with great celerity to a mortal issue, the stage of excitement not occupying more than forty-eight hours, and the subsequent one of collapse a still shorter time. In general, however, the acute inflammation of the brain proceeds less rapidly, and the disease is protracted a litttle beyond the first week. But the sub-acute inflammation of

the same part, next to be noticed, is more common than the preceding, and occupies, from first to last, a considerably longer period.

For some days, the sub-acute inflammation of the brain most frequently steals on in typhus by almost imperceptible approaches. At first there are little more than the usual degrees of head-ache and of vertigo, with general lassitude, fugitive pains in the muscles or joints, torpid bowels, and uneasy feeling at the pit of the stomach, commonly accompanied with loathing of food, and a disposition to vomiting, especially on any sudden change of posture. The pulse is small and quick, but the carotid, and even the temporal, arteries beat with rather more than ordinary force. The tongue at first is covered with a whitish fur; the cheeks are alternately pale and flushed throughout the day; the countenance has a heavy, wearied expression; and the eyes often feel uneasy, as if small particles of sand were in them. Besides, some of the rest of the external senses are almost always disordered, particularly the hearing, which, though occasionally more obtuse, is generally more acute than natural. The forementioned symptoms continue without material alteration for three or four days; although the patient may often be remarked to sigh, breathe quicker, and grow more irritable, as well as restless, seldom remaining long in the same place or position. At length, pain of the head, and uneasiness in the orbits of the eyes are

more severely felt; the eyebrows are sometimes suddenly knit together; the arms tossed about the bed; or one or both hands now and then pressed against the forehead. The pain of the head continues to increase; and in two or three days more, there are sensations of an undescribable uneasiness, constantly and distinctly referred to the brain. The eyes are now rather blood-shot, and intolerant of light; the anxiety of the præcordia is much augmented; the respiration more hurried; the heat of the surface more elevated; the face permanently flushed; the tongue drier and stiffer; and the involuntary sighing more frequent. The patient now lies at nights with his eyelids half closed, in light distinct dozings, associated with moaning, frightful dreams, and startings; or he is harassed by perpetual watchfulness, joined with frequent wanderings of the mind. As the inflammatory affection advances, day after day the sensorial functions continue to be more and more disturbed. At last, delirium becomes unceasing, when signs of an oppressed brain gradually make their appearance; under which the patient slowly sinks into dissolution, with hiccup, petechiæ, subsultus tendinum, an apoplectic expression of the features, and a red, glary eye, floating insensibly in an envelope of mucus.

When connected with the sub-acute kind of inflammation of the brain, typhus may continue from thirteen to twenty days, and during its course, have

a considerable variety of expression; but the symptoms, already enumerated, have appeared the most common and conspicuous in the examples of this nature, which have fallen within the sphere of my observation.

The acute and sub-acute forms of inflammation, agreeably to my anatomical researches, produce in typhus nearly the same morbid appearances of the brain or meninges; the traces left by the former being merely somewhat deeper, and more extensive. The pia or dura mater almost always exhibits marks of a previous increase of vascular action, with some coagulable lymph effused between them. Adhesions are often found in the convolutions and hemispheres of the brain; and the medulary part, on cutting, is covered with red points. The choroid plexus is generally turgid with blood; and the ventricles frequently contain a serous sort of fluid, especially in very young subjects.

In lax irritable habits, particularly in feeble hysterical women, and in constitutions broken down by the long use of ardent spirits, the simple typhus is, now and then, accompanied with fits of wild and almost maniacal delirium. But nearly from the commencement of such cases, there are transient flushes of the face, followed by paleness; weakness and variableness of the pulse; light tremors of the hands, such as attend habitual drunkenness; general soft-

ness, and dewy moisture of the skin, increased by the slightest exertions. Besides, the heat is little augmented; there is an eager, suspicious look; and a peculiarly hurried, unconnected mode of speaking; and great apparent earnestness in the pursuit of a variety of imagined objects;—all or the greater part of which symptoms mark a very different state of the brain from that connected with the forementioned modifications of typhus.

In typhus, the lungs and their connections, especially in very cold variable weather, are sometimes subject to the acute, but more frequently to the subacute inflammation; and as the breathing is considerably affected, even in the simplest cases of this fever, we ought to be the more attentive, that we may be enabled to unmask the most insidious attacks of pulmonic inflammation.

When the pleura and lungs are affected with the acute species of inflammation, the local disorder is sufficiently obvious. With the ordinary symptoms of typhus, a permanent pain is then felt in some part of the chest, generally acute, though occasionally obtuse, but in either case it is much increased by deep inspiration. There is a sense of weight or constriction across the breast, the respiration is always laborious, the thorax heaves, as if under some oppressive load, and the alæ nasi are thrown into perceptible motion. The patient is extremely rest-

less, and has a frequent troublesome cough, which augments both the pain in the side and the difficulty of respiration; most frequently he cannot breathe with any degree of ease when recumbent, but is obliged to have the trunk considerably elevated. The features altogether indicate surprise, alarm, or anxiety; the eyes seem prominent; the cheeks and lips are generally of a deeper colour than natural, yet in some cases the face has a pale, bloated appearance. The tongue is commonly foul in the middle, and of a dark red round the edges; the pulse is sometimes slow, full, and strong, and in other instances, quick, small, and weak. As in almost all local inflammations, the temperature of the skin varies a great deal in the day, and partial perspirations are not uncommon, especially when the pain of the side is acute.

Several cases of typhus have occurred in my practice, with as formidable a train of symptoms as those above specified: in some of them the difficulty of breathing was at first apparently spasmodic, abating and increasing alternately, as happens in certain forms of asthma. When such an occurrence is noticed in this fever, it may be generally considered as the precursor or the concomitant of pulmonary inflammation: the practitioner, therefore, should be very cautious about the exhibition of any stimulant, such as æther, more particularly as the pulse in those examples is almost always low and oppressed.

When typhus is complicated with the acute form of pulmonary inflammation, it often terminates fatally within the first nine days, and towards its close there is usually much disorder of the mental faculties. On examining the bodies of patients who died of this combination of disease, I have generally found some degree of congestion in the brain, and have seen large portions of the pleura literally coated with coagulable lymph, and considerable quantities of serum effused into the chest. In some instances the pleura alone was affected, and in others the inflammation had extended to the substance of the adjacent lung, in which there was either great congestion, a collection of pus near the surface, or an extravasation of lymph or of blood. Marks of increased action were occasionally observable on the mucous membrane of the trachea, and likewise, though rarely in comparison, on some part of the pericardium.

The thoracic inflammation, however, which is most frequently seen combined with typhus, assumes the sub-acute form, and apparently commences in the mucous membrane of the trachea, or in the pleura. It is to this modification of the disease that I am desirous more particularly of directing the attention; because, as it is less calculated to strike the senses with alarm than the forementioned, it may more easily betray the medical attendant into a false prognosis, or into an erroneous practice.

The sub-acute form of inflammation most frequently begins in the trachea like an ordinary catarrh. Then there are mostly tension and pain across the forehead; heaviness, stiffness, and slight tenderness of the eyes; flushing over the cheeks, with a deepened redness of the lips, and general fulness of the face; sense of uneasiness in some part of the trachea; huskiness, or hoarseness in the voice; uneasy respiration; and more or less constriction, weight, or soreness in the thorax. In addition to these symptoms, a frequent cough exists, which at times excites retching or vomiting, and which is at first dry, but in two or three days is attended with an expectoration of loose or viscid mucus, occasionally streaked with blood. For some days, these appearances undergo little change, and even may at last spontaneously disappear; yet most frequently the breathing daily becomes more oppressed, and the cough harder, especially at nights. Whenever the patient falls into a short sleep, the chest heaves with a more than ordinary effort, and the lips are not closed as is usual in that state; on the contrary, his mouth is considerably opened, and he breathes interruptedly, with an audible, thick, purring noise. He is generally awakened by a fit of coughing, when he usually spits up a little mucus, and continuing for sometime in a state of irritation, chiefly complains of head-ache, uneasiness in the breast, thirst, and dryness of the mouth. As the pulmonary disorder advances, the pulse is accelerated; and there are now

and then rather sudden attacks of shortness of breathing, probably proceeding from an accumulation of phlegm, or from some spasm of the bronchial passages, excited by the irritation of an inflamed surface. But, independently of such attacks, the respiration by degrees grows more laborious and noisy; and pain, soreness, or distress of some kind is felt in the chest, particularly on change of posture, yawning, sneezing, deep inspiration, or coughing. The system becomes more irritable, the motion of the alæ nasi greater, the state of the skin and temperature more variable, the countenance more anxious, and the lips and tongue of a more leaden colour. The head, heavy and somewhat vertiginous from the first, is at length troubled with continued delirium; and after much suffering, the patient finally expires, under coma, convulsions, or suffocation. The above is not an uncommon mode in which the sub-acute form of pulmonary inflammation proceeds, and it is usually protracted a little beyond the second week. But at other times it holds a different course; and when the mildness of its symptoms indicates neither immediate nor remote danger, an unexpected and often mortal change takes place, from the inflammation having suddenly increased in the trachea or its branches, or from its having extended itself to the substance of the lungs. In three or four instances, I have seen the inflammation begin as a common cynanche tonsillaris, and after having occasioned some ulceration in the throat, spread to the wind-

pipe, and produce a most alarming combination of symptoms.

In examples of the above nature, I have generally found the lining of the trachea very vascular after death, and a considerable quantity of mucus in the bronchia, sometimes mixed with purulent matter. Occasionally the pleura and lungs have also exhibited traces of inflammation, and there has often been some congestion apparent in the brain. In typhus, increased actions occasionally take place, on the mucous membrane of the trachea, or of the bronchia, with little or no cough for a few days; and the increased action is at first only indicated by a slight purring noise in the breathing, or by a little mucus or lymph being hawked up in a slight effort, either with or without some streaks of blood. Such cases should always be particularly attended to from the beginning, because the symptoms are very apt to proceed insidiously; so that life is sometimes at last endangered by an accumulation of phlegm in the bronchial passages, from the progressive inflammation.

When the sub-acute form of inflammation attacks the pleura chiefly, the breathing, if narrowly watched, may be observed to become quicker and more anxious, especially in the horizontal posture. Cough and uneasiness are almost always excited on a full inspiration; and there is, for the most part, pain or soreness in the left side, or under the sternum, with

a feeling of weight or tightness in the breast. Most systematic writers assert, that pain is always clearly manifested when the pleura is inflamed; but I have attended some cases which proved the contrary, and the following one may be reported as a specimen. In a middle aged man, who had been infected from a mild typhus, under which his wife laboured, pectoral symptoms were developed with those of the contagious fever. During the whole of his illness, he made no complaint of pain in any part of the thorax, but simply of slight soreness, with an ill-defined uneasiness in the left side; and these were accompanied by short alternations of heat and cold, and by a frequent hard cough, which was always worse at nights. Although his breathing continued rather oppressed, and the sensorial functions were occasionally deranged, yet he had no decidedly dangerous symptoms, until about the end of the second week, when the respiration became extremely laborious, and soon afterwards he died suddenly, from apparent suffocation. On examining the body, no lesion of consequence could be discovered, except the remains of an inflammation in the left pleura, and an imposthume in the left lung, the rupture of which had been the immediate cause of death; and doubtless both the inflammation and abscess had originated in the course of the fever, as the patient had been in perfect health before he was infected.

In cases similar to this, the progress of the inflam-

mation is of course involved in considerable obscurity. But it may, nevertheless, be traced by the continuance of uneasiness in the chest; by the increase of the cough, dyspnœa, and restlessness; by the patient panting or breathing short whenever he speaks; by the number of respirations exceeding the natural amount in a given time; by the colour of the face and lips indicating some impediment to the common changes of the blood in the lungs; and by the gradual increase of the pulse, and of the fever. When the inflammation ends in an abscess, the uneasiness in the breast abates; but the breathing becomes more laborious, and there are chilly and hot fits, with copious sweats, and great loss of strength. The most common termination, however, in instances of this kind, is by an effusion of serum into the bag of the pleura of the right or left cavity of the thorax; and although it often protracts life, as being the substitution of a less for a greater disease, yet patients generally sink under it at last. But in every case attended with difficult respiration, there is always a danger of serous effusion into the substance of the lungs, from the violence of their own increased action.

It now and then happens in typhus, that there are sudden determinations of blood to the chest, which almost as quickly recede, and are followed by similar determinations to the head, and both may at last disappear without doing material harm. But whenever such irregularities of the circulation occur, they

ought to be constantly noticed, lest they should eventually injure the structure or functions of the parts thus affected.

Delirium is a common attendant on typhus at all times, but particularly when any part of the thorax is attacked with inflammation which, impeding the transmission of the blood through the lungs, tends to prevent its free return, by the veins, from the brain. This circumstance, together with the increased action of the arteries of the head, may perhaps go far to account for the frequent disturbance of the sensorium in such cases; but it is not improbable, that the delirium may also in part depend on those inexplicable sympathies which exist in the nervous system. The ancients, influenced by speculative opinions about the seat of the soul, used much more frequently than the moderns to refer delirium to the diaphragmatic and pericardiac regions. Certain it is, that I have met with some cases accompanied by great intellectual derangement from the beginning, in which the minutest dissection after death could detect no vestige of cerebral disease; though in all an effusion of serous fluid was found in the pericardium, with some appearance of inflammation on its surface, and on that part of the pleura which covers the diaphragm.

Four instances of contagious fever have come under my care, in which the mucous membrane of the trachea appeared to be chronically inflamed, the

disease in all of them continuing from two to three months. Nothing very remarkable occurred for the first six or seven days of the attack in these cases, except that there were occasional heats and chills, unusual prostration of strength, heaviness as well as great uneasiness in the head, and an uncommon irritability of the stomach. After this period, the respiration grew more hurried, and a troublesome cough arose, which much augmented the head-ache and sickness. For several days the cough remained dry, but it afterwards became moist; the sputa at first rather resembling the white of an egg, but finally appearing more viscid and opake. The pulse throughout was feeble and quick, the tongue foul, the heat variable, the bowels irregular; and although the patients frequently appeared drowsy, for the most part they obtained very little sleep. In two of the persons thus affected, the complaint continued nine weeks, and although it assumed a consumptive character before death, the signs of genuine typhus could easily be recognized to the last. After having produced an extraordinary degree of suffering, the other two cases ended favorably, but the convalescents were long in an emaciated and enfeebled state; an abatement of the vomiting, some desire for light food, and a tendency to quiet sleep being for some time the only appearances which augured recovery. An esteemed professional friend, Mr. Croudace of Bishopwearmouth, once nearly fell a victim to this rare modification of the disease, which in him from first

to last continued about three months; and as a most decisive proof of its peculiar nature, he infected at a late period of its progress a younger brother, who then waited almost constantly upon him, with a simple and unequivocal typhus. Not having had an opportunity of ascertaining the morbid appearances after death in any instance of this form of typhus, I cannot speak positively as to the real character of the pectoral affection, but it most probably consists in a species of chronic inflammation of the trachea; and I am the more confirmed in this opinion, because it is that formed by Mr. Croudace, from repeated reflections upon his own sufferings.

The same distinction, which has been made with respect to the cerebral and thoracic inflammations, may be applied with equal correctness to those which not unfrequently attack the abdominal cavity in typhus, for they are also of an acute or sub-acute form, and shall now be concisely exemplified. Though I have attended several typhous cases, in which abdominal inflammation existed, the symptoms have seldom been sufficiently distinct and defined to enable me to point out the precise seat of the inflammation. In fact, this cannot be so readily accomplished as some have imagined, because gastritis, enteritis, and the like affections of the belly, have many signs in common, and because the inflammation is most frequently not confined to one part, but extends to others; a circumstance which most practical writers

have not sufficiently regarded, in their descriptions even of simple acute inflammations of the abdomen. It is easy in the closet to draw minute lines of distinction between inflammations situated in the various textures and organs of the same cavity; but at the bed-side such distinctions will often be found embarrassing or useless. For practical purposes, it is generally enough to know, that internal inflammation does actually exist, since, wherever seated, the same or similar principles of treatment must be adopted. If indeed one region should seem to be more especially affected, it is only right that the attention should be carefully directed to that quarter; but at the same time it ought not to be withdrawn from adjacent and even distant parts, for pathological views of fever to be clear and correct, must likewise be comprehensive. In adverting, therefore, to the abdominal inflammation of typhus, it is not my wish to divide them with systematic particularity and precision, but rather to describe them as they have presented themselves to my own observation.

The intestines, stomach, and liver, are more commonly inflamed in typhus than the other contents of the abdomen, and when of the acute species, the inflammation, in general, is most distinctly manifested. If it be seated in the stomach or intestines, there are mostly deep continual pain, and soreness of the integuments increased on pressure; retching, vomiting, or anorexia; desire for cold acidulous drinks;

short, quick, respiration; fulness as well as flatulence of the bowels; great prostration of strength; restlessness, and anxiety. The patient almost invariably lies upon his back, frequently tossing the arms about, moving the feet, or changing the position of the head. If desired to turn upon his side, it gives him considerable uneasiness in the abdomen; and if suddenly raised into the upright posture, he generally begins to eruct, retch, or vomit. The pulse is small, and sharp, and in some cases very quick, and in others below a hundred in the minute; * the tongue foul in the centre; the mouth clammy; the taste vitiated; the bowels are for the most part bound; the lips parched and pale, or somewhat livid; and the countenance expresses much distress. The pain of the belly is augmented by yawning, by coughing, or by drawing the breath deeply down, and sometimes even by the blandest liquids, which are usually rejected, unless taken in small quantities at once. If the pain be acute, the skin is often of a pungent heat about the breast and abdomen; while the forehead and face, exposed to the atmosphere, are sometimes damp, and even cold, the partial diminution of the temperature on these parts being occasioned by the evaporation of the perspirable matter. It may not be unimportant to remember this partial coldness, as

* In some very violent instances of inflammation of the stomach, attended with great pain, I have known the pulse not exceed eighty in the minute; but it invariably became much quicker on copious venesection, and continued so for a considerable time afterwards, even during convalescence.

I have known it mistaken for an indication of gangrene, when the inflammation had not actually reached its acme. During the advancement of the abdominal affection, the pulse grows smaller and quicker, the vomiting more urgent, the belly rounder and more swollen; the thirst, sense of internal heat, and restlessness being likewise all aggravated. Upon the approach of suppuration, of effusion, or of gangrene, there are rigors or slight chilly fits, with so much abatement of pain, that an unexperienced observer might be induced to give a favorable prognosis: but an universal collapse quickly supervenes, attended by cold, copious, clammy perspirations; quick, short, agitated breathing; hurried, undulating pulse; frequent, dark, loose stools; and incessant vomiting. Yet inflammation of some of the abdominal viscera, especially of the stomach or bowels, often terminates fatally before it has advanced into actual gangrene, the patient finally sinking under the accumulated force of exhaustion and of irritation.

The symptoms of gastritis and enteritis have been described together, because my own observations have not furnished me with the means of unequivocally discriminating these disorders. But it may be generally affirmed, that in the beginning of gastritis, vomiting immediately occurs on the blandest liquid being received into the stomach; whereas in the beginning of enteritis, it is well known that vomiting mostly does not occur until the fluid has remained

some time on the stomach. In the advanced stages, however, of both these affections, the stomach is usually alike irritable. Though gastritis does not so often take place as enteritis, I cannot think it so rare an occurrence as some have confidently asserted. Morbid dissections have fully satisfied me, that the seat of the pain is sometimes in the bowels, when the inflammation is confined to the stomach, and vice versa. This fact surely proves the futility of trusting to the common nosological definitions. In two cases of typhus which occurred in my practice, the pain was so frequently referred to the vicinity of the heart, and the pulse so very irregular throughout, that carditis might have been readily suspected; but on examining the bodies after death, I discovered that the stomach was the chief seat of the inflammation, the heart and its appendages being quite free from disease. In both these instances there was a distressing vomiting, and also a sense of burning heat at the stomach, which are two of the best diagnostics of gastritis. When the villous coat of the stomach is attacked alone, the inflammation will sometimes proceed to a fatal termination without pain; but in such cases there is generally an intense desire for cold drinks from the very onset to the end.

If the liver be attacked with inflammation in typhus, giddiness, load about the breast, sickness, and vomiting, are often among the primary symptoms; and the patient, complaining of pain and soreness,

with weight about the right hypochondrium, can neither bear pressure in that place, nor lie upon the left side, without an increase of pain. When the convex surface of the liver is the seat of the inflammation, it is sometimes not very easy to distinguish the hepatic affection from pleuritis: but in the former, uneasiness is excited by pressing the hand under and above the false ribs, and there is generally some pain at the top of the shoulder, circumstances not commonly observable in inflammation of the pleura; and further, the cough and dyspnœa are not so distressing as in the latter, while the abdominal secretions, especially those of the liver, are much more vitiated. The cough is for the most part dry, but sometimes humid, and frequently excites a pungent pain in the part affected, with a tendency to nausea, retching, or vomiting. The spirits and strength are much depressed; the mind is apprehensive, confused, or slightly delirious; the pulse quick and tensive, or low, changeable, and oppressed; the breathing anxious and variable; the tongue covered with a dirty white, yellowish, or brownish fur; the urine scanty and deep colored; the bowels are generally irregular; and the feces dark, slimy, varied, and mixed with morbid bile. The heat of the skin, though sometimes only a little, is at other times much above the standard of health; yet, according to my observations, it is very rarely jaundiced in the genuine typhus. In the few instances of this description, which have appeared in my practice, as the yellowness was

diffused over the cuticle, the pulse grew slower, and the temperature declined; but these were utterly fallacious indications, whenever vomiting, with a burning heat about the præcordia, and sinking of the strength supervened. In two unfortunate cases, from the commencement of which there were strong symptoms of hepatitis, and the skin towards the conclusion became tinged with bile, on dissection no marks of inflammation were found in the liver. It is perhaps not improbable, that this viscus and other important parts occasionally lose their vitality from inflammation, and yet on examination exhibit no signs of their previous excitement, all trace of that having passed away before death, by an excess of morbid secretion.

In the course of the abdominal inflammations combined with typhus, the sensorium is often very much disturbed, which is rarely the case in simple inflammations of the belly. Delirium, as before remarked, is one of the most ordinary symptoms of typhus under all its modifications; but, singly considered, it is by no means conclusive as to the real state of the brain or its appendages. An opinion, therefore, ought never to be formed from it alone, but, like the pulse, it should always be taken in conjunction with all the material circumstances of the case. It is only by such a mode of proceding, that we can satisfactorily ascertain whether the delirium in any instance originates in the brain itself, or whether it is

the product of mere nervous sympathy, or of arterial excitement from some distant irritation.

When other parts, than those above specified, are inflamed in typhus, a reference to the place of the pain, to the concomitant symptoms, and to the functions most decidedly disordered, may lead to the seat of the inflammation. Yet, as formerly hinted, however circumscribed the inflammatory action may be in the first instance, it often so speedily implicates the neighbouring parts, that it becomes no easy matter to decide precisely where it has commenced, or where it may terminate. Instead, therefore, of being able positively to point out its site and extent, the candid practitioner can often only express himself assured of its existence: in this respect resembling the mechanician, who knows when a complicated piece of machinery is going improperly from the nature of its motion; though he cannot always specify, by a mere external inspection, the part which is more especially deranged. Morgagni, Van Swieten, De Haen, Pringle, and others, have recorded examples in which different abdominal viscera were inflamed without the least degree of pain. It must however be acknowledged, that such occurrences are not very common, yet the certainty that they do sometimes exist, should make us most circumspect in our general conduct, particularly as it relates to idiopathic fevers, in which the visceral inflammations are often more than commonly insidious.

The sub-acute form of inflammation not unfrequently exists in the abdominal viscera, and is attended with much less striking symptoms than the acute form, as the two following cases will testify. Some time ago, an aged person labored under typhus, whose bowels had been greatly neglected throughout the disease, but as he had never made any complaint of fixed permanent pain, the existence of abdominal inflammation had not been suspected. At the expiration of the first week of the fever, after a strong shivering fit, succeeded by a cold clamminess of the skin, and an almost continual vomiting of a darkish fluid, he expired suddenly in convulsions; and on examining the body, unequivocal proofs of inflammation and gangrene were found in the small and large intestines. Another patient, at an advanced period of life, had an attack of typhus, and with the ordinary symptoms, solids and liquids were rejected almost immediately after they were taken: there was also a constant sense of a burning heat and load at the stomach, accompanied with foulness of the tongue; small, oppressed pulse; tenderness of the abdomen on forcible pressure; and an extraordinary prostration of strength. The saline effervescing draughts were tried without the least relief; but under the impression, that a hidden inflammation was existing somewhere in the abdomen, about nine ounces of blood were abstracted, the crassamentum of which was very cupped and buffy. Still, however, the burning heat and vomiting continued, and they

were not removed until eight additional ounces of blood were drawn from the arm, and the patient had been frequently purged, and even blistered over the surface of the epigastric region.

In several instances of the inflammatory typhus, I have known patients so little incommoded for some time by the pain of the abdomen, as hardly to complain of it when they lay perfectly still in a particular posture; and it only became uncomfortable to them when pressure was applied, or when they were desired to move, cough, or take a full respiration. Yet, in general, some feeling of pain, with chilliness, and an increased velocity of the pulse, indicate the approach even of the sub-acute form of inflammation in the belly. At times, too, the pain is distinctly felt, and referred to particular regions; and when it suffers remission, which is not unfrequently the case, tenderness of the integuments, and internal uneasiness may still be detected by pressure. In the liver, spleen, kidneys, and peritonæum, the inflammatory action may remain latent the longest, and only fully develope itself after a continuance of several days. But the existence of the sub-acute inflammation in any part of the belly may be inferred in typhus, when, after the supervention of the stage of excitement, the stomach remains uncommonly irritable; when there are constant feelings of weight or uneasiness about the scrobiculus cordis; quickened and anxious respiration; small, and rapid pulse; indistinct chills

and heats; dry or foul tongue, with great thirst; watchfulness and jactitation; frequent eructations; sense of internal heat; soreness, or pain on pressure in some particular part; and an unusual quantity of of dark, thick, fluid matter in the stools, on the operation of a purgative. The progress, likewise, of such affections may be traced by a variety of symptoms, even when pain is not very conspicuous. As the inflammation advances, the vomiting becomes more urgent; the pulse more accelerated; the respiration shorter and more uneasy; the sense of internal heat greater; the thirst more intense; the belly rounder and fuller; the eructations more frequent; the face paler; the restlessness augmented; and the condition of the temperature and skin more variable. It is universally known, that Hippocrates attended most minutely to the respiration in diseases; so that the state of this function was to him what the state of the pulse is to us, a criterion or a guide as to the nature and diagnosis of diseases. Now in all abdominal inflammations the breathing is more or less quicker than natural, and this is a circumstance which ought never to be forgotten.

When the bowels are in apparently lax condition nearly from the commencement of typhus, it will be generally found, on cautious inquiry, that the bile is secreted in unusual quantity or quality, from a morbidly excited liver—or that some irritating scybalæ are retained in the colon—or that there is a degree

of increased action in the villous coat of the intestines. Indeed, wherever the stools are mixed with considerable portions of glary mucus, and are preceded or followed by tenesmus or griping, the practitioner may be assured, that an increased action is existing on the interior membrane of the bowels, even if pain be absent. What is commonly called a diarrhœa in fevers, is in reality often the effect of a sub-acute inflammation of the intestines, and in almost every case, so far from precluding purgatives, imperiously calls for their administration.

There is often a striking change in the countenance of persons affected with visceral inflammations of an obscure nature, by which I have been partly led to the eventual discovery of the latent mischief, even when the patients themselves were lulled into a confident hope, that all cause of apprehension was past. This peculiarity in the countenance is varied in different examples, and even in different stages of the same case: it may be an expression of suspicion, alarm and anxiety, dejection and peevishness, or confidence and apathy. But occasionally the countenance undergoes little change for some time, and the pain of the belly, which at first is often so indistinct, as to require cross-questioning to ascertain it, gradually becomes more manifest, whilst the abdomen grows more distended, and the pulse more frequent. In such examples it is not until the symptoms have reached this crisis, that any very material change of

countenance can be remarked, which, however, when it once takes place, hardly ever quits the patient but with the disease. Yet after all, one of the best methods of finding out obscure abdominal inflammations is forcible pressure over the bowels, which indeed ought never to be neglected as a test. When the hand is pressed on any inflamed part, pain is often excited, which would otherwise scarcely be felt at all. We might adduce several illustrations of this, in certain species of external inflammations, but perhaps one may be deemed sufficient. In the inflammations to which the feet and hands are liable, sometimes little or no pain is felt in the part affected, while the limb is laid at rest in a certain position; but no sooner is it pressed upon and moved, than the pain becomes urgent. Something similar to this may often be observed in the sub-acute form of the abdominal inflammation, and therefore both pressure and motion are excellent expedients in the diagnosis. It is not, however, within the limits of my present knowledge and experience to point out all the different modes, in which the sub-acute inflammations of the belly come on and advance in typhus; but it is hoped, that the few foregoing hints will not prove wholly useless, as a faint light to others, who may hereafter explore this obscure department of the subject. Many cases of typhus, commonly supposed to be fatal from mere debility, really derive their mortal character from some undiscovered or neglected inflammation of the abdominal viscera.

In the preceding observations, the cerebral, thoracic, and abdominal inflammations have been considered in their proper order. But from this arrangement it must not be inferred, that the inflammation is always entirely limited to the head, to the thorax, or to the belly; for the truth is, that it may exist separately in each or combinedly in all of those regions; though one part will be generally found the principal or primary seat of the inflammation, and the rest more slightly affected. Yet before concluding the particular remarks upon the inflammatory affections of typhus, it may not be irrelevant to add, that this fever is sometimes combined with the acute rheumatism. Even with such a conjunction, the internal parts are now and then inflamed, to which indeed the attention should always be directed; but more especially when there is a sudden cessation of pain in the joints, with an increase of pulse and of fever; as such an event is frequently the forerunner or concomitant of some visceral inflammation.

The descriptions which have been given and the remarks which have been made, in relation to the inflammatory forms of typhus, might serve to illustrate the nature and cure of various affections, such as dysentery, puerperal fever, erysipelas, and simple inflammations of the vital organs; but in another part of this work I shall briefly advert to these, and for the present pursue the consideration of typhus, that all its varieties may be fully exemplified.

THE CONGESTIVE TYPHUS.

Some allusions to congestive disease may be found in the ancient records of physic, especially in those of Hippocrates, who under the terms *lipyria* and *epiala*, has often glanced at some peculiar forms of fever, in which there seems to have been internal accumulations of venous blood, without the increased action of the heart and arteries, which designates the *causus* or burning fever. Yet medical writers in general have paid infinitely less attention to the congestive than to the other varieties of fever; and it is doubtless to this cause, that we must attribute our deficiency of knowledge respecting its pathology and treatment. In modern times, ever since the great discovery of the circulation, most authors who at all attended to the vascular system, have placed the seat of acute disorders in the arteries, and overlooked in a great measure the morbid states of the veins. Dr. John Clark, however, and a few others have certainly made some desultory remarks on the character of congestive diseases: yet so far as I know, Dr. Robert Jackson has indisputably the merit of having surpassed his predecessors in the distinctness and fidelity, with which he has described the symptoms. But whilst thus paying a just tribute of praise to this indefatigable physician, it is my design to adduce the substance of my own observation and experience concerning this still difficult part of medical science;

and if I should succeed in removing any part of the obscurity which has hitherto caused doubt and uncertainty as to the real nature of congestive disease, the road to inquiry and improvement will hereafter be made more safe and accessible.

One of the most remarkable cases of the congestive typhus which I ever witnessed, occurred many years ago in a slender young man, who had travelled several miles to see a relative sick of that fever, with whom he remained, and upon whom he attended several days. On returning home, he was suddenly attacked with vertigo, chillness, sickness, and extreme weakness of the lower extremities; and when he reached his own house he appeared most strangely confused in his head and intellect, staggering, and talking like one intoxicated. He was immediately put to bed, and did not complain much afterwards, but gradually fell into a profound coma, in which he lay without motion at my first visit. The face was then pale and somewhat livid; the breathing deep and impeded; the pulse small, frequent, and irregular; the tongue white, and covered with a slimy saliva; the skin dingy and partially damp, the heat of which felt nearly natural over the breast and belly, but the extremities were rather cold. The head was shaved and blistered without loss of time, mustard sinapisms were applied to the feet, and large cathartic injections repeatedly administered. In about twelve hours, when the bowels had been often and

copiously moved, the patient gave some indications of returning sensibility; and in a few hours more, looked up, and even recognized some intimate friends, who were present, but spoke in a feeble and faultering accent. For several hours there was an appearance of improvement in some particulars; his pulse and breathing became freer, his voice more natural, and his skin of a warmer glow; but in contravention to these favorable symptoms, his hands were tremulous, his tongue fouler, and there were a few dark petechiæ scattered over the trunk and arms. Moderate portions of wine were now recommended at short intervals, with a view to support his strength; but the debility increased under this plan, and he again sunk into a deep stupor, in which he expired, slightly convulsed, about forty hours from the first attack.

Some months after the occurrence of the above, another and similar example came under my inspection. The subject of it was an aged, but robust man, who, having been exposed to contagion, at first became pale and languid, and who finally was afflicted with vertigo and dimness of sight; deep stunning pain of the head; confusion of mind; sense of stricture in the chest; and oppression of the præcordia. The countenance had a vacant and intoxicated expression; the tongue was white in the middle, smooth and moist. No material augmentation of the temperature existed; the skin was dry on the

trunk, and damp on the forehead and extremities; the pulse underwent little change, except that it was somewhat more frequent, and less resisting than usual. The patient seemed restless for some hours, but like one yielding to excessive fatigue, or to inebriety, he sunk into an appearance of perfect sleep, attended with slight startings of the tendons and heavy respiration. In this state, blisters were applied to the head and chest, sinapisms to the feet, and in conjunction with enemeta, purgatives were administered; as upon trial it was found that liquids could be swallowed, although with difficulty. After the bowels had been evacuated of much dark feces and bile, the stupor, as in the former instance, gradually disappeared, and some partial efforts of excitement succeeded. Still, however, there existed obvious disorder of the sensorium, evinced by a stupid fatuous stare; a slow, drawling mode of speaking, and much intellectual confusion. By degrees some petechiæ came out on different parts of the body, and the tongue grew foul and brown, the breathing laborious, the skin rather greasy as well as cool, and the pulse considerably weaker and more rapid. Wine, cordials, and laxative medicines were now the principal means employed, but they proved completely inefficient. On the third morning of the disease, immediately after a dark liquid stool, a general shivering supervened, like the cold fit of an ague, and life was soon terminated, by successive attacks of strong convulsions. Permission was obtained to inspect the body, in this interesting

case. The derangements in the head were nearly analogous to those which are often exhibited after the fatal issue of apoplexy. On laying back the dura mater, the vessels could be seen loaded with blood along the convolutions of the brain; and on deeper examination, the whole cerebral substance was found preternaturally turgid, with some bloody serum in the lateral ventricles. The liver and spleen were likewise greatly distended with grumous blood, and the lungs had a gangrenous appearance in some places.

Another case of congestive typhus, which I attended some years ago, did not accord in many points with either of those above reported. It took place in an adult, on the ninth day from the period of infection, on the morning of which he was so well as to join in active amusements with some acquaintances; but he felt oppressed and sick in the course of the day, and went to bed in the evening, with the hope of relieving himself from the indisposition which had come so unexpectedly over him. About three hours having been passed in a sort of disturbed slumber, he awoke with a rending pain in the temples; peculiar heaviness, noise, and swimming in the head; some indistinctness of mind; involuntary sighing; and sensations of weight and distress at the pit of the stomach. The countenance soon acquired a look of extreme agitation; the skin was dry on the trunk, and damp on the extremities; the centre of the

tongue white, but moist; and evidences of irregular excitement gradually developed themselves; the pulse being small and hurried, the heat sharp and concentrated about the præcordia, but lower than natural on the wrists, ankles, forehead, and lobes of the ears. Pretty large doses of strong cathartic medicines were exhibited through the night, but without effect. Early on the following morning delirium occurred, attended by spasmodic twitchings of the face, small rapid pulse, and a bloated countenance. The excitement still remained unequal, the surface being hot in some parts, while it was cold in others; and the raving continued without intermission until the ensuing night, when he grew much quieter. After having lain some time in an apparent stupor, occasionally broken by sudden startings and shrieks, he was seized with strong convulsions, and died soon afterwards. Although the general aspect of this case did not correspond with that of the two foremen-tioned, yet on dissection the morbid appearances were not very dissimilar; for the brain, liver, and spleen were the parts chiefly engorged with blood, the two latter organs being ruptured by forcible pressure of the hand.

A gentleman of active habits, who had imprudently exposed himself to the contagion of typhus, felt uncomfortable some days afterwards; and though he could not command his attention as usual, he was able to take moderate exercise. One morning while walk-

ing in the streets, he was seized with vertigo, and dimness of sight, and reeled in such a manner, as to induce some persons, who happened to be near him, to suppose that he was drunk. After having been assisted home, he seemed to be distinctly threatened with apoplexy, and on that account a vein was opened at the arm. The blood merely trickled from the orifice for several minutes, at length, however, it gushed in a full stream, and about sixteen or eighteen ounces were abstracted, with evident relief of some of the more urgent symptoms. The patient was immersed to the middle in a warm bath, and bland, tepid liquids were afterwards given, followed up by the exhibition of brisk cathartics and stimulating injections, which operated powerfully in a few hours. The disorder soon clearly revealed itself, having all the marks of a genuine typhus; but in this instance, a perseverance in purgatives, the semicupium, and warm diluents, soon effected a cure.

The cases above cited may be viewed, so far as my observation goes, as tolerably fair examples of the more violent forms of the congestive typhus, in which, different from what is observed in the simple and inflammatory typhus, the stage of excitement, without the interference of art, never emerges at all, or only does so very imperfectly; the energies of the system either being nearly extinguished by the venous congestions, or so much oppressed, as to be unable to create an universal excitement. The open forms of

fever, in which heat and arterial re-action are equably developed, will be found the least dangerous; and those of an obscure nature, in which neither heat nor arterial re-action are equably developed, the most perilous and unmanageable. In congestive cases, the local accumulations of blood in the veins, obstruct from the beginning the common series of febrile phenomena, and there is in consequence either a total want of morbid heat, or a concentration of it from partial excitements in some particular parts of the body, whilst others are considerably beneath the natural temperature. It is the entire absence or the partial presence of excitement, which constitutes the chief external distinction between the severest forms of the congestive typhus; as they all coincide in oppressing the functions, or in deranging the structure of some important organ, by an almost stagnant accumulation of blood in some part of the venous system.

The attacks of the most dangerous forms of the congestive typhus are generally sudden, and marked by many remarkable symptoms:—an overpowering lassitude; feebleness of the lower limbs; deep pain, giddiness, or sense of weight in the encephalon; a dingy pallidness of the face; anxious breathing; damp relaxed, or dry withered skin; and those peculiar conditions of the temperature which have been noticed above. The pulse is low, struggling, and variable; the stomach irritable; frequently there is an inability from the first to hold up the head; and

the mind is more often affected with dullness, apprehension, or confusion, than with delirium. The whole appearance of the sick impresses the attentive practitioner with the idea, that the system in general, and the brain in particular, are oppressed by some extraordinary load. Both the manner and look of the patients undergo early and great alterations: sometimes they slowly drawl out their words, or utter them in a hasty and yet imperfect mode like people who slightly stammer when embarrassed; they not unfrequently seem as if stunned by a blow, half-drunk, or lost in a reverie; and at times have the bewildered aspect of persons suffering under the first shock of an overwhelming misfortune. The eye is occasionally glary and vacant, without redness; but at other times it is heavy, watery, and streaked with blood, as if from intoxication, or want of sleep. At the commencement the pulse is often less altered as to frequency than might reasonably be expected, yet in general it becomes very rapid towards the close; the tongue is usually little altered in the first stage, but in the last it is frequently rough, foul, and brown; the bowels are mostly very torpid in the beginning, and the stools procured dark and scanty; whereas, in the advanced stage, the bowels are generally loose, and the stools copious and involuntary. Eructations are not uncommon at all times, and the epigastric region is often much inflated. On account of the general torpor, the secretions are diminished or suppressed; and, as justly remarked by Dr. Robert Jackson, the skin is

often in that peculiar state, that if blisters be applied, they either do not act at all, or so defectively, as to leave an appearance as if the part had been slightly seared by a heated iron. Petechiæ in general appear earlier in these than in any other varieties of typhus; and in the last stage there are sometimes gangrenous spots on the extremities, oozings of blood from the mouth and nostrils, and hemorrhage from the bowels.

There are conditions of the sensorium, voluntary powers, and præcordia, no less than of the respiration, pulse, and skin, which mark the progress or decline of such affections with the greatest certainty. If the stupor or delirium continue to increase with an augmentation of the oppression, if the respiration become more anxious, the pulse weaker and quicker, the skin colder, as well as more flaccid, and especially if the stools or urine be passed insensibly, the case will almost invariably terminate mortally. But, on the other hand, if the stupor or delirium should disappear, while the oppression obviously abates, and the respiration becomes easy, the pulse full and regular, with an universally warm skin, a favorable prognosis may generally be given. The abatement, however, of the delirium or stupor, unaccompanied with the other favorable signs enumerated, is not at all to be depended on; for patients sometimes become rational and collected a few hours before death, and that even when the brain is in a state of irretrievable disease, as the two cases and dissections before given may

serve to illustrate. It must always be recollected, that in examples of congestive fever, there is a singular disposition to relapse; so that a patient may grow very suddenly and seriously worse, when all the previous symptoms might have led us to form a sanguine opinion. The consideration of this truth should make us pause before we give our prognosis, or at least teach us that, in the severer modifications of congestive fever, the patient is not always perfectly safe, until he is perfectly recovered.

There are comparatively milder forms of the congestive typhus, in some of which the patient walks about for a few days after the infection has begun to operate, and complains little, except of uneasiness of the head, loss of appetite, and languor, appearing rather paler than when in health. If strictly attended to, however, by a medical observer, a change may usually be remarked in his whole demeanour; he cannot so steadily command his attention as before, is not only restless during the day, but watchful at nights, and soon betrays an absence of mind or loss of memory. At length he becomes garrulous like a half drunken person, or talks inconsistently with his former views and character; after the lapse of another day or two, the mental confusion is most obvious to every one, he begins to be unsteady in his gait, and has a heavy intoxicated cast of the countenance. If carefully examined at this period, his tongue will be found white, his pulse small, quick,

and perhaps irregular; his breathing hurried; his bowels slow; his skin rather hot about the trunk, but coolish and damp on the extremities. If the disease be allowed to proceed, without decided interruption, the hands shortly become very tremulous, and the confusion of mind passes into delirium; yet there is still a want of regular excitement, demonstrated by the alternate flushing and paleness of the face, the feebleness of the pulse, the unequal state of the whole circulation, the coolness of the extremities, the partially concentrated heat of the trunk, and the laxity of the skin. Aural and visual deceptions succeed, and force the patient into violent exertions, and every attempt to overpower him by coercion tends to aggravate the delirium, and sink the strength. His tongue grows daily fouler, and his debility greater; he begins to pick the bed clothes, and at last petechiæ and subsultus tendinum appear. About this period, the general turbulence sometimes unexpectedly abates, and he may become so serene and rational, as to give some hopes that a favorable crisis has really taken place: but the calm is most frequently deceitful, being soon followed by an universal collapse, in which death occurs, mostly without much struggling. Several cases, nearly answering to the above description, have fallen under my notice, and I have found, that if opportunely and properly encountered, they may generally be subdued; but that if overlooked or improperly treated in the commencement, they will commonly baffle the best directed measures.

There are yet other forms of congestive typhus, which, after a day or two of lassitude, are usually denoted by chillness, nausea, short, quick breathing with frequent sighing, unpleasant sensations at the stomach,—and also by white tongue, depravation of taste, irregularity of the bowels, dark bilious excrements, pain and giddiness of the head, an alarmed or confused state of the mind, paleness of the face, dejection and languor of the countenance, inflation of the epigastric region, and great prostration of strength. An imperfect excitement is gradually developed, which rises and falls three or four times in the course of twenty-four hours. During the slight exacerbations of the fever, the skin is hot and dry in some places, especially about the præcordia; the face flushed; the pulse rapid; the breathing quickened almost to panting; the eye glossy; the countenance agitated; and the mind solicitous. These short paroxysms of fever passing away, the skin grows damp and relaxed, the face pale, the pulse less frequent and more undulating, the breathing slower, the eye duller, and the countenance and mind more serene. After some partial efforts of this nature, the excitement is sometimes fully emerged, and the fever may put on a simple or an inflammatory character; but it more often advances as an irregular one of congestion, and, if left to itself, most frequently destroys the patient, within the first two weeks of the attack, by cerebral or hepatic derangement, or suddenly suppresses life, by an unexpected engorgement of the

brain, or of some other vital organ. In such affections, there are occasionally distinct remissions, and likewise apparent translations of local oppression from one part to another. The remissions are commonly fallacious, and the translations are always to be dreaded; for, independently of the mischief which they may produce in the viscera affected, they denote a loss of equilibrium, and a general disorder in the circulating system, which are not easily corrected.

The remarks which have been made, as to the prognosis in the severer sorts of the congestive fever, are applicable to the forms now described; except that in the latter, delirium is sometimes a favorable symptom when it is of the light imaginative kind, and when it occurs with evidences of returning regularity in the circulation and excitement.

Opportunities of inquiring into the morbid derangements after death, in the less violent forms of congestive typhus, have not occurred to me so frequently as I could have wished. The examinations, however, which I have been permitted to make, would induce me to conclude, that the head and liver, as in the more urgent instances, are in general more affected than any other parts; and there can be little doubt that the dark, unnatural stools, and the oppression of the præcordia, so constantly complained of by patients, are chiefly referrible to hepatic disorder.

The foregoing are some of the principal modifications of the congestive typhus, which have come within the sphere of my observation; and it would perhaps be superfluous to attempt a more detailed account of them, as all the forms of this variety of fever may be recognized by the depressed state of the pulse and circulation; the uneasiness in the head; the anxiety of the præcordia; the peculiar condition of the temperature and skin; the total want of excitement, or its partial and unequal developement; the suspended or vitiated secretions; and the local load, and general oppression.

It has been noticed, that a distended state of the venous system exists in the first stage of the simple typhus, yet so slight, as to give way to the occurrence of the stage of excitement, which comparatively equalizes the circulation. It has also been shewn, that in the last stage of the same modification of fever, there are sometimes certain degrees of venous engorgement about the viscera, resulting from the universally increased action of the arteries throughout the second stage, an action which forms no part of the congestive typhus. The congestive, therefore, differs from the simple typhus, firstly, because the viscera are far more engorged in the first stage; and secondly, because, through the continuance of the engorgement, that stage is followed by a general collapse, without the intermediate one of regular and universal excitement, which not only partly charac-

terizes the simple typhus, but which produces the occasional and partial congestions of its last stage.

If then the congestive so obviously differs from the simple, it may be inquired, in what does it differ from the inflammatory typhus? Universal augmentations of heat and excitement, attend the inflammatory, which are not the concomitants of the true congestive typhus, and which may be considered as the principal *external* distinctions between them. But further, there is in the inflammatory, a general excitement of the arterial system, with an increased activity and fulness in the capillaries of the diseased part; whereas, in the congestive, the force of the arterial system is not only diminished generally, but the whole venous circulation oppressed, and particularly obstructed where the congestion exists. Agreeably to this view, we find that the blood in the inflammatory is almost invariably covered with a buffy coat; but such an appearance is never observed in the strictly congestive, which seems to denote, that the size found on the crassamentum of venous blood, proceeds from the influence of a local or general change of action, originally occurring in the arteries. Moreover, the morbid appearances after death are commonly different, the large veins in the viscera being greatly engorged with black grumous blood, in cases of the congestive; whereas, in those of the inflammatory, the capillary arteries of the membranes which invest the viscera are in general found prin-

cipally affected, and the redness is diffused, and of a brighter colour. Still, however, it is only candid to confess, that this part of the subject is not altogether free from obscurity; for every experienced practitioner must know, that even in acute inflammations of the viscera, the action of the heart is sometimes so much oppressed, that the general excitement does not at all correspond to the danger and extent of the topical disorder. Possibly something similar may now and then take place in what has been called the congestive typhus, an actual inflammation being masked under external appearances of a deficiency of general heat and of arterial tone, or the action of one part seemingly augmented, while the rest of the sanguiferous system is much depressed.

But to place this subject in a stronger light, it may be observed generally, that the venous system is more immediately and chiefly concerned in the phenomena of the congestive typhus, and the arterial system in those of the simple and inflammatory typhus. Though the engorgements may exist in different organs in the congestive typhus, yet the brain and the liver are the parts most frequently and seriously affected; and next to them the spleen* and

* It is well known that the spleen may be extensively diseased, without re-acting upon the system, except through its mere pressure on the neighbouring parts. This can perhaps hardly be said of any other internal organ of equal magnitude. Can this viscus be intended by nature as a receptacle for venous blood on those emergencies, which are liable greatly to disorder

lungs. The most violent forms of the congestive typhus sometimes resemble apoplexy in their symptoms, to which indeed they often have a near affinity in their pathology. The balance between the arterial and venous systems is more or less disturbed in every instance of congestive fever; for there is more blood accumulated in the veins, and of course less contained in the arteries, than in a natural state. This loss of balance is especially observable on the skin, less blood circulating in the vessels of that part than common, while the central organs of the body are greatly engorged. It is perhaps to the preternatural fulness of the larger veins, that the lowness and oppression of the pulse ought to be attributed; at least it generally rises after depletion from the veins, which seems to restore the circulation to an equal state again. From observation and dissection, I am certain that venous congestion exists in many acute and chronic diseases, combined with a deficiency of arterial action; and that in such cases, contrary to the common opinion, a low, feeble pulse indicates, in the first instance, the propriety of depletion rather than of stimulation. According to the cal-

the circulation? And do its structure and situation seem fitted for such a purpose? The sanguiferous system abounds with precautions against venous congestion, and should the spleen be considered one of them? Dr. Rush, of Philadelphia, formerly threw out some hints, in order to shew that the spleen was an organ to preserve the system from great excitements of the heart and arteries; but it seems to me more adapted to guard against sudden congestions of the veins, and at some future period I shall endeavour to support this opinion by a reference to facts.

culations of Haller, the veins in health contain three-fourths of the whole mass of blood, the remainder flowing in the arteries. The same admirable physiologist has declared, that the blood may actually coagulate, from the slowness of its motion, in the veins of a living person; and he has also pointed out the precautions which nature has used to prevent such an occurrence, by the free anastomoses of vessels, that guard against obstructions, and admit of opposite currents of blood. Probably the anatomist may find, in the peculiar structure of the venous apparatus of the head and of the liver, the cause why these organs should more often suffer in congestive fever than the rest. If we permit ourselves impartially to consider the vast importance of the whole venous system, we shall perhaps be led to conclude, that its morbid states have by no means received sufficient attention; particularly in those modifications of febrile disease, where there is from the beginning an obvious want of tone in the heart and arteries, which has too frequently been mistaken for general debility, but which in fact is a state of oppression, proceeding from fulness of the venous system. The various modifications of congestive fever may be divided into the regular and the irregular; in the former there is no arterial excitement whatever, in the latter there are very partial arterial excitements, united with a general depression of the system. This discrepancy of character arises from the different degrees of the venous congestion. In the regular congestive fever, the

topical accumulations of blood are so great as wholly to overpower the resistance of the arterial system; whereas, in the irregular congestive fever, they are not to such an extent, and consequently admit of some re-action, which would appear like an effort of nature to restore the natural balance of the circulation. In the first tage of the simple and inflammatory typhus, there is generally more or less rigor, which ushers in the stage of excitement; but I have hardly ever met with an instance of the true congestive fever, in which the first stage was accompanied with universal shivering. This might lead one to suppose, that the cold shivering fit was intimately connected with the production of the stage of excitement: more extensive observation, however, than I have yet been able to make, would be requisite to confirm this as a general fact.

In the strictly congestive forms of fever, the heart is oppressed by the accumulation of venous blood about its right chamber and adjacent vessels; and this oppression of the heart is the chief cause of the diminished tone of the arteries; for though the arteries indirectly assist the circulation by transmitting the force which the heart communicates, they add no direct mechanical power to the function of that organ. In the inflammatory forms of fever, or indeed whenever the hot stage is developed, so far from being oppressed in general, the action of the heart is increased, and by consequence that of the arteries

also; and this difference in the action of the heart and arteries is one of the most distinctive marks between fevers of an open and masked character, or rather between those of an excitive and of a congestive nature. Many other fevers besides typhus assume the congestive form. Indeed that is the case whenever the cold stage so oppresses the powers of life as to prevent the emergence of the hot stage; and whatever the cause of the venous congestion may be, their seats and symptoms will be similar, and of course they will require a similar method of cure, as will be explained in speaking of some diseases in the sequel.

For several years past, considerable attention has been paid to ascertain the accuracy of those distinctions which have been made in this work, with regard to the varieties of typhus; and it is confidently believed, that they have their foundation in nature, no less in this than in many other fevers, which are usually termed idiopathic. Most systematic writers have considered and treated these disorders as too simple, and, in a practical view, have disregarded some of those discrepancies, which are constantly occurring, and from the due consideration of which accurate and comprehensive modes of cure are principally to be deduced. The characters of every idiopathic fever vary at different times, and the methodus medendi requires to be regulated accordingly. The most beneficial remedies have been brought into disrepute, by having been employed

without due regard to the varieties, or to the stages of diseases; and it is only by assiduously attending to such minutiæ that we can be enabled to avoid an indiscriminate practice, and successfully ascertain the nature of fever which often, like the human character, may be most clearly penetrated, by marking the developement of what, at first sight, might seem minor circumstances. At the same time I am ready to allow, that it will require the greatest attention for the medical student to bear in mind the minute details of symptoms, and the diagnostics made beteen each variety of typhus. Indeed this can only be accomplished by a cautious and accurate observation of the appearances in the subjects of this fever, and a comparison of these with the descriptions given in the body of the work;—so difficult it is to carry the histories of disease, as related in books, to the bed-side of patients, there to serve as a discriminating guide in forming the principles of treatment.

The doctrine of a simple, inflammatory, and congestive form of fever, will perhaps go far to comprehend all the varieties of febrile diseases, from whatever causes they may proceed; for whatever may be the difference in the character of the external symptoms, still one or other of these states will be found to predominate, and their effects on the vital organs constitute the grand objects in the treatment. It seems to be a received opinion by many, that epidemical fevers in particular are not under the same in-

fluences as sporadic fevers, and that their cure is involved in much greater obscurity. But do they not, like sporadic fevers, assume the simple, inflammatory, or congestive forms? And under this view, are they not, like them, also reducible to precise rules of practice? Yet it is not meant to insinuate, that all epidemics are essentially the same; for it must be manifest, that a similarity in the aspects of the concomitant pyrexia does not establish a sameness in kind, neither does the existence of a sameness in the incidental symptoms; but the distinguishing, pathognomonic symptoms must all agree in kind, which they do not, to justify the conclusion, that epidemics ought to be classed under one head. Nevertheless, it is in the medical, as in the moral world, similar effects may be produced by different causes; and I do mean distinctly to say, that, beside their peculiarities, epidemics generally have such external phenomena, and generally produce such internal derangements, as to prove them to be attended with a simple, an inflammatory, or a congestive fever, by the character of which the treatment must be mainly regulated, however various their abstract nature or their origin. If an epidemic were to appear one year under a simple form, it would readily yield to the ordinary remedies; but if in another year it appeared under a highly inflammatory or congestive form, those remedies would be found completely inefficient:—yet from such a result, it would be wrong to conclude, that the epidemic observed no

certain laws, for in both the cases supposed above, the febrile phenomena would be governed by regular, though somewhat different laws; and the failure in the last mentioned, should be attributed to the practitioner not having marked this discrepancy, which required a correspondent variation in the treatment. The fact is, that in the several varieties of the same epidemic, as different modes of practice are frequently required, as if they were dissimilar diseases, which might be instanced by the histories of the plague, and of several marsh, scarlet, typhous, and other fevers, which have prevailed epidemically under simple, inflammatory, or congestive characters, and in which similar measures have been erroneously extended to all the forms of the same species of fever. Comets were long supposed to differ from other heavenly bodies, in not being regulated by the same fixed laws; and doubtless such a supposition contributed, in part, to prevent that constant and close observation necessary to perceive how any natural phenomena are directed. This conjecture, however, is now totally removed, by the discoveries which have been made in astronomy. And has not the notion that epidemics do not observe the laws of ordinary fevers operated in a similar way, to retard our investigation into the powers which control them? In our successive advances in medical knowledge, we have found the greater part of diseases under the influence of certain modes of action; and our interest in future will be, not in denying that any are

altogether or nearly without order, but in diligently inquiring into those laws by which they are governed. As it was by extending the principle of centrifugal, and centripetal forces to the motion of comets, that they were discovered to be regulated by the same fixed laws as other parts of the solar system,—so it would be most pleasing to find, that the doctrine of a simple, an inflammatory, and a congestive variety of fever might be successfully applied to the whole of epidemics,—which may be considered as *cometary* in relation to other febrile diseases, and which really shed a disastrous influence over the world. But particularly to illustrate the applicability of this doctrine to epidemics, one of the most obscure shall be selected; and at some future opportunity the subject shall be resumed, in order still further to elucidate the nature and effects of epidemics.

THE PLAGUE.

It is a very common opinion, that there is a close analogy between typhus and the plague; and as the first has been accounted, by most modern writers, an asthenic disorder, so the last in our times, has generally been considered an affection of direct and excessive debility. The prevalence of this sentiment has brought depletion into disrepute, among European physicians, as a curative expedient for the plague, and has also introduced an undecided and palliative one in its stead. An attentive comparison of the

most authentic histories of the plague, with the phenomena of typhus, has certainly convinced me, that a close analogy actually does exist between these two maladies; and having endeavoured to demonstrate, from personal and positive experience, the fallacy of the scholastic notions as to the nature of typhus, I shall now, from the observations of the best authorities, attempt to shew, that the plague, in like manner, is not a disease of real debility, but one of excitement and of congestion.

Different authors have arranged the appearances of the plague in different ways, according to the peculiarity of their pathological views or to the extent of their information. Most of the French writers on the subject have specified five varieties, the ingenious and candid Dr. Russel has extended them to six, and Chenot, even to seven; but, as some of these varieties are distinguished by unimportant and even common symptoms, the more generally adopted arrangement shall be preferred here, which only admits of three species of the plague. Upon the whole, one of the best and briefest descriptions of this disease is contained in an excellent paper, published by Dr. now Sir Brooke, Faulkner, in the Edinburgh Medical and Surgical Journal; and as it has been drawn from an extensive observation, during the late appearances of that complaint in the island of Malta, it shall be selected as a sort of text to the few comments about to be offered.

I. "That in which, at the first attack, the energy of the brain and nervous system is greatly impaired, indicated by coma, slow, drawling, or interrupted utterance. In this description of the disease, the tongue is white, but little loaded with sordes, and usually clean, more or less towards the centre and extremity; the anxiety is great; cast of countenance pale; stomach extremely irritable, and the strength much impaired. Rigors and pain in the lower part of the back are among the early precursors of the other symptoms. This was observed to be the most fatal species of the plague, and prevailed chiefly at the commencement of the late disasters. Those who were thus affected sometimes died in the course of a few hours, and with petechiæ."

II. "The next species I would describe is, that in which the state of the brain is the very reverse of what takes place in the former, the symptoms generally denoting a high degree of excitement: the pain of the head is intense; thirst frequently considerable, though sometimes wanting; countenance flushed, and utterance hurried. The attack is ushered in by the same rigors and pain of back as in the foregoing. Epistaxis not unfrequently occurs in this class of the disorder. The glandular swellings come out very tardily, and, after appearing, recede again without any remission of the general symptoms. Carbuncles arise over different parts of the body or extremities, which are rapidly disposed to gangrenous inflamma-

tion. The delirium continues extremely high and uninterrupted, and the patient perishes in the course of two or three days. Sometimes he lingers so far as the seventh, yet rarely beyond this period, without some signs of amendment. Of this second description, the examples have been very numerous, and were nearly as fatal as the preceding. In the countenances of some, just previous to the accession of the more violent symptoms, there is an appearance of despair and horror which baffles all description, and can never well be mistaken by those who have seen it once."

III. "The third species which I would enumerate, is nearly akin to the last, only the symptoms are much milder, and the brain comparatively little affected. The buboes and other tumours go on more readily and kindly to suppuration, and by a prompt and early employment of remedies, to assist the salutary operation of nature, the patient has a tolerable chance of surviving. Cases of this class are often so mild, that persons have been known to walk about in seeming good health, and without any evident inconvenience from the buboes."*

The above classification of Sir Brooke Faulkner is the more satisfactory, because it accords in the main points with that of Lange, Orræus, and other expe-

* See Vol. X. page 143, 144, of the Edinburgh Medical and Surgical Journal.

rienced observers, in whose writings the fullest confirmation of its correctness may be found. The first species in particular has been distinctly marked by Hodges and De Mertens; and the plague which raged at Florence, in 1348, was evidently of that sort, for Boccaccio mentions that the patients died on the third day, without any degree of fever. Dr. Russel has given a most admirable history of this most dreadful species, in what he terms his first class, while the second species is comprehended under his three following classes, and the third species under his fifth class.* But more strikingly to shew the excellency of this arrangement, it is only necessary to transcribe Sydenham's concise description of the plague, in which the three species are very clearly characterized. "The plague (says this illustrious physician) usually begins with chillness and shivering, like the fit of an intermittent; soon after, a violent vomiting, a painful oppression at the breast, *and a burning fever,* accompanied with its common symptoms succeed, and continue till the disease proves mortal, or the kindly eruption of a bubo, or parotis, discharges the morbific matter, and cures the patient. Sometimes the disease, though rarely, is not preceded by *any perceptible fever,* and proves suddenly mortal; the purple spots, which denote immediate death,

* See from page 97, to page 111, of a Treatise of the Plague. By Patrick Russel, M. D. F. R. S. Formerly Physician to the British Factory, at Aleppo. London: printed for G. G. J. & J. Robinson, 1791.

coming out, even whilst the persons are abroad about their business. But it is worth observing, that this hardly ever happens but in the beginning of a very fatal plague, and never in its decline, or in those years wherein it is not epidemic. Again, sometimes swellings appear, without having been preceded either by a fever, or any other considerable symptom; but I conceive that some slight and obscure shivering always precedes the seizure: now such as are attacked *in this favorable manner,* may safely follow their business, as if they were in health, and need not observe any particular way of living."* If any further evidence were wanted to prove the propriety of distinguishing the plague into the three species above mentioned, it might be adduced from an elegant little tract of Dr. Pearson, to which the reader is particularly referred, relative to this part of the subject.†

After what has been said, it may not be improper to draw a short parallel between this complaint and the typhous fever. The first species of the plague, as described above, has obviously a strong resemblance to the congestive, the second to the inflammatory, and the third to the simple typhus; and I ap-

* See page 77, 78, of the Entire Works of Dr. Thomas Sydenham, newly made English from the Originals. By John Swan, M. D. London: printed for E. Cave, 1753.

† See from p. 5. to p. 13, of a Brief Description of the Plague, &c. By Richard Pearson, M. D. London: printed for Thomas Underwood, 1813.

prehend, there can be little doubt that the first species is connected with visceral congestion, the second with visceral inflammation, and the third either with an evident, though moderate excitement of the circulation, or with so slight a degree of fever, as to be hardly observable. The congestive nature of the first species is distinctly denoted by the want of regular and universal re-action; the tendency to coma; the paleness of the countenance; the irritability of the stomach; the overwhelming oppression of the whole system; and the low and quick, or nearly natural state of the pulse, noticed by Dr. Russel and others, though omitted in the description given by Sir Brooke Faulkner. The inflammatory nature of the second species is clearly indicated by the excessively great excitement; the intense pain of the head; the high and uninterrupted delirium; the appearance of carbuncles with a rapidly gangrenous tendency; and those sensations of inward burnings, which have been mentioned by Dr. Russel and many authors beside, and which are the well-known attendants of visceral inflammations. The generally simple character of the third species is too evident to require comment: it often appears to be a milder disease than even the least complicated form of typhus, but sometimes verges upon, and even passes into, the inflammatory species.

Passing from the symptoms, we shall find that the internal lesions, which the plague produces, also tend

to confirm us in the opinion, that it is inflammatory or congestive in its worst forms. Procopius informs us, that on opening the bodies of those who died of the plague, which raged in the reign of Justinian, a great carbuncle was found within; * which language implies, that the patients had died of inflammation in some of the viscera. In those who perished at Marseilles, within the first two days of the attack, the French physicians discovered by dissection, that some of the viscera were in a state of mortification; † and Dr. Mead, in tracing a parallel betwixt the small-pox and the plague, attempts to prove by positive evidence, that death in both is usually caused by mortifications of those parts.§ Larrey declares, that he has opened the bodies of many persons who died of the plague, and generally found the same appearances: namely, the omentum, stomach, and intestines gangrenous in some places; the liver in a state of congestion; the gall bladder filled with black fetid bile, and the pericardium with a bloody fluid.‖ Dr. Pearson has given references to several writers to shew, that, in patients who died of this disorder,

* The History of Physic. By J. Friend, M. D. The fourth Edition. London: printed for M. Cooper, 1750. Vide p. 148.

† Observations & Reflections touchant la Nature, &c. de la peste de Marseilles, pag. 47, & suiv.

§ The Medical Works of Dr. Richard Mead. Vol. II. page 92. Edinburgh: printed for Alexander Donaldson, 1763.

‖ See page 55, 56, of Memoirs of Military Surgery. By D. J. Larrey. Abridged and translated from the French, by John Waller.

proofs of inflammation and gangrene have been found in the brain and its investing membranes, in the lungs, and in the stomach, as well as intestines; facts surely tending to corroborate the opinion here maintained. But by way of lessening the force of those examinations, Dr. Pearson affirms, that what he calls *pestilential* is very different from *simple* inflammation, not being accompanied by a hard pulse, nor by an exudation of coagulable lymph, but rapidly terminating in gangrene; circumstances, he thinks, which should be well considered by those who might be led by the term inflammation to resort to the lancet.* But admitting, for the sake of argument, that the supposed *pestilential* inflammation is neither accompanied by a hard pulse, nor by an exudation of coagulable lymph, and that it terminates rapidly in gangrene; still it does not legitimately follow, that it is very different from *simple* inflammation, concerning which similar assertions may be justly made. As an example in point, *simple* inflammation of the intestines is frequently neither accompanied by a hard pulse, nor by an exudation of coagulable lymph, but terminates rapidly in gangrene. Dr. Pearson has, therefore, failed to prove, that *pestilential* differs from *simple* inflammation, the attributes which he has ascribed to the former, being common to the latter. Besides, contrary to the assumption of this ingenious author, it is well known that the plague is

* See page 18, 19, of Dr. Pearson's Brief Description of the Plague.

attended, in the first stage of its inflammatory forms, with a hard and strong pulse; and a sufficient number of morbid dissections have not yet been made, to authorize us to state, as a general fact, that the visceral inflammations in the plague are unaccompanied by an exudation of coagulable lymph.

Apparently as an illustration of the peculiarity of *pestilential* inflammation, Dr. Pearson notices, that Lange relates a case of the plague, in which the liver and lungs were so completely gangrened as to crumble between the fingers. But this proves nothing specific in the inflammation, for a similar state of the viscera has been witnessed after the termination of other and essentially different fevers, which had been attended with extreme inflammation or congestion, as may be particularly seen in the works of Dr. Robert Jackson. An instance of *simple* abdominal inflammation occurred in my practice some years ago, which ended mortally in less than twenty-four hours; and, on dissection, both the coats of the stomach and intestines were ruptured, in some parts, by the slightest touch. The very propriety, therefore, of the epithet *pestilential* may be questioned, as applied to those inflammations of the viscera, which take place in the plague; in fact, like the occult qualities of the ancients, it expresses nothing precise or definite, and like them, also, is calculated to satisfy us with the appearance, instead of the reality of knowledge. Indeed, if its use were once sanctioned

in medical literature, we might, by a parity of expression, call inflammations of the viscera, typhous rubeolous, remittent, and the like, according to the nature of the fever with which they happened to be connected. Buboes and carbuncles generally attend the plague, as rashes, the measles and the scarlet fever, and though each local affection may be pathognomonic of a specific malady, yet the visceral inflammation, which may arise in each of those maladies, is not, therefore, to be deemed peculiar and specific;—because it is denoted in all of them by the same or similar symptoms, produces the same or similar consequences, and exhibits the same or similar appearances after its termination.*

If we proceed from symptoms and dissections, to inquire into the opinions and practices which have prevailed among the experienced, and into the effects of the various measures employed, we shall still be induced to conceive, that the plague, in its aggravated aspects, is inflammatory or congestive. It has been the custom in Asia, from time immemorial, to bleed in this distemper. Oribasius, the friend and physician of Julian the Apostate, mentions particularly,

* If these transitory pages should ever be honored by the perusal of Dr. Pearson, it is hoped that he will make due allowance for the liberties which have been taken with the above parts of his ingenious tract relative to the plague. The vital importance of the subject has compelled me to differ freely and openly from him in a matter of opinion, but I shall not, hereafter, the less respect his superior talents and attainments as a physician.

that being himself attacked with the plague when it raged in Asia, he sacrificed his leg on the second day, and abstracted two pounds of blood; and adds, that this method not only succeeded in himself, but also in several others.* If then the plague were really a disease of debility, as many modern theorists have contended, how could it be cured by copious depletion? Had blood-letting been directly detrimental, it would indubitably have been abandoned ages ago in the East; but we have the authority of Dr. Russel for stating, that it was still universally practised in his time by the Asiatic physicians, though more sparingly than was advised by Oribasius. Nay, he most satisfactorily proves, by numerous cases, that, under various circumstances of the plague, venesection may be safely and even advantageously employed; and he successfully combats, on the ground of his own experience, some objections which have been urged against its causing or increasing a depression or sinking in the pulse. This physician, however, seems to have followed the plan of the Eastern practitioners, having seldom taken away more than eight or ten ounces of blood at once: but is there not reason to believe, that this evidence would have been more decided and favorable, if he had used the lancet more liberally in the first stage of the disease? The abstraction of eight or ten ounces of blood would

* See page 16 of the fourth Edition of Dr. Friend's History of Physic, before quoted.

occasionally stop the progress of some of the highly acute fevers of Great Britain; but as such a mode would most frequently fail, in the violent cases, it might, if commonly adopted, afford arguments, to ingenious men, against the propriety of venesection, even in such disorders. From the most accurate accounts, it appears that the plague is usually more highly inflammatory or congestive than any idiopathic fever of this country, at least it is manifestly more so than typhus; and therefore it may be fairly argued, that it would require greater depletion for its cure. The best informed authors agree, that the danger in the plague does not depend upon the glandular affections; and if it does not depend upon visceral inflammation or congestion, upon what does it depend? It cannot for a moment be allowed, that the danger proceeds from pure debility, because invigorating measures do not succeed, and because, whenever depletion has been early and decidedly tried, its effects have commonly been very beneficial. Sydenham quotes no less than fourteen authors of great note, who recommend blood-letting, while he himself speaks of its efficacy in the warmest terms, and does not hesitate to consider the plague, like erysipelas, a most inflammatory infection.* Dr. Mead not only advises venesection, but declares that we must draw blood with a more liberal hand than in

* See page 80, 81, 85, 86, of the edition of Sydenham's Works, before quoted.

other cases, if we are to expect success from it in this complaint.*

If we impartially investigate the histories of the plague, as it has prevailed at different times, we shall almost uniformly find, that the cordial plan of treatment has been attended with the most disastrous consequences in severe cases; and, contrasting these with the good effects repeatedly produced by opportune and free depletion, it will surely be admitted, that we ought not now to be deterred from giving the latter method the fairest and fullest trial, because half-measures have so often failed, or because the modern doctrines of debility have paralized the right arm of many European practitioners. Indeed it will be evident to every attentive observer, that in those violent forms of the plague, which terminate in a very short time, the purely stimulant treatment cannot possibly be of essential service; partly on account of its general inefficacy in the beginning of all acute fevers, and partly on account of the dangerous character of the particular disease. To neglect therefore so powerful a remedy as depletion, in such cases, is in effect, to leave the unfortunate patients to struggle unassisted with their fate; like those inhabitants of certain countries in the East, who are said to be deserted by their brethren in the extremities of age and sickness. But it may be presumed, that the exam-

* See p. 95, of the edition of Dr. Mead's Works, before quoted.

ple which some practitioners have so successfully set, as to the treatment of the yellow fever, will be followed by those who may hereafter witness the plague; and we shall then probably find, that the latter disease, like the former, will cease to be generally fatal, when the palliative plan is abandoned for decisive measures at the commencement. The combined agencies of bleeding, purgatives, and calomel as a powerful alterative, have never been brought fairly into play at the onset of the worst forms of the plague: but if I were this moment placed where that disease rages, these should be the remedies upon which I would place my chief reliance; and as other formidable affections have yielded to their impulse, so I would expect them to be more efficacious than any single expedient yet prescribed, if they were applied on the first day of the attack, and repeated decisively while the dangerous symptoms remained.

Marsh fevers, the small pox, the measles, and many other febrile diseases might be examined, as the plague has been done, to shew, that, however various their causes, their grand effects on the vital organs, are still simple excitement, inflammation, and congestion; and I am greatly mistaken if this doctrine does not afford a key, which will unlock the principal difficulties on the subject of fevers particular and general. The causes of fevers are very various, and so is *their external pathology;* but still I must contend, that *their internal pathology* is uniform.

If in our consideration of the methods of treatment we could, for the time, disregard the causes and the mere *external pathology*, and look only at the great effects on the vital organs, or in other words at the *internal pathology*, our success would be much greater; and until we do disembarrass our minds from that confusion which arises from the contemplation of so many causes, and of so many external symptoms, we shall never be able to arrive at those comprehensive and plain principles of practice which may be successfully applied to the whole class of acute fevers. But in the course of these practical illustrations, this part of the subject will be adverted to again, meantime the treatment of typhus shall be brought under discussion; and conformably to the distinctions already made, the cure of its simple inflammatory, and congestive varieties, shall be explained in succession, as the treatment of each necessarily differs in some important particulars.

TREATMENT OF THE SIMPLE TYPHUS.

It would be fortunate if professional advice were sought for on the first attack of fevers, because for the most part they might then be either completely arrested, or reduced so much in their force, as to be finally overcome; but unhappily the patient often flatters himself, that the primary feelings of indisposition will gradually abate of themselves, and under this impression allows the disease to proceed, until a

dangerous combination of symptoms renders the success of the best measures uncertain. The symptoms of the simplest typhus vary according to the time that it has continued; and this fact shews the necessity of carefully noting the several stages, which have been described, for the remedies proper at one period will be found extremely pernicious at another. Yet self-evident as these truths are, they have not always been sufficiently regarded by some practical authorities, whose contrarieties might probably be reconciled, if we knew the circumstances under which their various remedies were recommended.

As soon as any patient falls sick of typhus, and the remark may be extended to almost every fever, absolute rest should be immediately enjoined: since, how mild soever the symptoms may be at the commencement, it is impossible to foresee to what they may finally lead, if then neglected; and the hazard is always greatly increased by attempts to cast them off by business or exercise. It is in the first stage of the simple typhus, that a period may always be observed, in which, by the retrocession of blood from the surface, and by certain degrees of internal venous congestion, the general balance of the circulation is disturbed, and in which much good may be done, by very simple means. Above all things, the practitioner must not be deterred by the appearances of debility from the use of evacuants, for they are not only safe, but highly salutary at this time, when the

system is nearly oppressed by a kind of preternatural burden, and not really in a state of exhaustion.

At the beginning of this stage, the stomach frequently rejects the greater part of whatever may be taken; and, on this account, there are very few medicines, which can be advantageously prescribed. Antimonial emetics, however, have been very generally recommended, and, according to my observation, are serviceable when the fever is of the least complicated form, commonly producing an improvement in the condition of the skin, respiration, and pulse, in particular; and perhaps it is on the power which they possess of determining the blood to the surface, and of changing the morbid actions of the circulation, that their efficacy is chiefly to be explained. In the beginning of almost all febrile complaints, of a simple character, emetics will generally be found very beneficial; though much neglected now-a-days by many practitioners, probably on account of the universal introduction of purgatives. When the stomach has been sufficiently evacuated in the simple typhus, no time should be lost in freely moving the bowels; and it is better first to empty the lower intestines of their contents, by a large cathartic injection, which frequently lessens or allays the irritability of the stomach, and thus gives the aperients, afterwards exhibited, the fairest chance of being retained.

The system in general is more torpid than natural in the stage of oppression; and of this torpor the bowels largely participate, so that purgatives ought to be given in such doses, as to insure their full operation. Nor need any risk be apprehended from three, four, or even more copious motions during the day; for, instead of weakening the patient, they will renovate his powers, lighten the system of the load which weighs it down, and contribute to restore the circulation to its healthy equilibrium. Sometimes I have known at this early period, an emetic and a brisk purgative cut short the fever at once; and where this desirable effect has not been produced, they have hardly ever failed to shorten its duration, and to lessen its danger.

The want of preternatural heat, and of arterial activity on the surface, in this stage, would *a priori* seem to contra-indicate the use of the affusion of cold water: without doubt it is highly improper, and might even put the life of the patient in jeopardy, by the sudden diminution of temperature, and the great pressure on the vital parts, which it would occasion by the recoil of the blood towards the interior. Yet the warm bath is a safe and efficacious remedy, and, with the means before mentioned, has considerable effect in equalizing the circulation. Tepid barley water, or thin gruel, which should now form the diet as well as beverage, may be taken with advantage, as they often have a tendency to lessen

the irritability of the stomach, and sometimes to induce a gentle and general perspiration, without finally causing any injurious excitement, local or universal. There may be cases in very old or debilitated habits, where, in conjunction with mild emetics, purgatives, the warm bath, and small portions of weak wine may be requisite before the second stage takes place;—but in general diffusible stimulants are quite inadmissible at this period, because they forcibly tend to make the consequent excitement of the second stage much more violent than it otherwise would have been, and might in that manner convert a simple, into an inflammatory typhus.

The apartment of the patient should, if possible, be large, and well ventilated, the heat of which ought not to be below fifty-six or sixty degrees of Fahrenheit's scale; for it must be recollected, that as the excitement has not yet taken place, the surface of the body cannot be long acted upon by a low temperature without prejudice. On several occasions, I have been able to trace the origin of local inflammations, particularly of the chest, to an imprudent exposure to cold, in the first stage of typhus.

The second stage, or that of excitement, is far more frequently witnessed than the first, at least by physicians, who are seldom consulted until the fever has fully developed itself, and even reached its acme; when the dry, burning heat of the skin is amongst

the most conspicuous symptoms, and when a treatment is required, in many respects different from that which has been recommended in the stage of oppression. But as the morbidly increased temperature, now involves so many important considerations, the rules relative to its management shall be explained, before proceeding to the other parts of the practice. Among the names of those who have contributed to illustrate the effects of cold and warm water, as a remedy for fever, that of the late Dr. James Currie stands deservedly pre-eminent, and will long be remembered with respect, by the philosopher, the philanthropist, and the physician. Agreeably to the experience of this estimable writer, the best time for reducing the preternatural heat in typhus, by the aspersion or affusion of cold water, is when the exacerbation is at its height, or immediately after it has begun to decline; and he therefore directs either the one or the other to be employed from six to nine in the evening, the period in which the febrile action is most intense. But he also expressly declares, that the cold water may be used at any time of the day, when there is no sense of chilliness present, when the heat of the skin is steadily above what is natural, and when there is no general or profuse perspiration. These principles are equally simple and intelligible, and on repeated trials I have found them excellent guides, during the whole term of excitement; although, as shall be afterwards shewn, they may be deceptive, and even dangerous, if followed in the

stage of collapse. And so far as I have remarked, a *slight* sense of chilliness ought not to preclude the application of cold water, provided the arterial excitement be universally developed, and the temperature every where steadily at a morbidly high point; care being taken, in such cases, that the water be not lower than 60°. of Fahrenheit's thermometer, and that too large a quantity be not affused at one time.

During the first, second, and third day of the stage of excitement, more especially during the first, I have sometimes seen the simple typhus entirely extinguished by the affusions of cold water, and failing to effect so much, they have generally been highly refreshing to patients, and, with other measures afterwards to be noticed, have enabled me so to lessen the fever as to insure a favorable issue. But from the fourth day of this stage, I have not often seen them useful; and from that time onward, until the period of collapse, it has been customary with me to employ the tepid affusions or bath, at the temperature of 94°. or 96°. of Fahrenheit's scale. When the former are used, in general I order, four or five times in twenty-four hours, about two gallons of sea-water, or spring-water mixed with some common salt, to be poured over the patient while he is supported upon a stool placed in a low, wide tub, his feet being covered with warm water: this operation is repeated at intervals of about one or two minutes, twice or thrice each time, until the skin become comfortably cool,

but not chilly, or contracted. The surface is then carefully dried, the patient put to bed, thinly covered, between clean sheets, and allowed to take moderate portions of some milk-warm, bland fluid, by way of promoting a gentle perspiration. Frequently when the tepid affusions have not succeeded in cooling the cuticle, I have added a small portion of ardent spirit to the water, with excellent effect, for it carries off the superfluous heat by a more rapid evaporation from the surface. In ordinary practice, a little common vinegar is the usual substitute on such occasions; but it is rather objectionable, because it very often contains a quantity of mucilaginous matter, which being spread over the skin, by the affusion, prevents the cooling process from taking place so readily, as when water merely, or when water and spirits are used, and which also, interrupting the perspiration afterwards, causes a more rapid accumulation of the febrile heat. This observation may seem too minute, but of its accuracy I am fully convinced.

When the warm bath is employed, the patient should remain in it at least ten minutes, or a quarter of an hour, otherwise it will be rarely followed by any permanent good. Perhaps it is difficult to speak with accuracy of the comparative utility of the tepid affusions and bath; but the latter has appeared to me more decidedly serviceable, its power in reducing heat, frequency of pulse, and febrile irritation, having

been generally greater, and of longer continuance.* But, as a counter-balance to these advantages, the affusions can be more frequently used, since they do not induce so much fatigue. Where insurmountable objections exist, in the patient or his friends, against the use of the tepid bath or affusions, partial ablutions of cold or warm water may be substituted; and with the aid of the free admission of fresh air, they are often of much benefit.

Among some of my medical friends, a strong prejudice prevails against the application of cold water in typhus, which has arisen from their having known several cases prove fatal, shortly after its use; three of this nature have come within my observation, but in one of them, the cold affusion was tried in the stage of oppression, and in the others at a very advanced period of the fever. Indeed I have reason to believe, that in all the fatal examples, above alluded to, it was, unfortunately, employed under similar circumstances. Occurrences such as these are the more to be deplored, not only because they might have been prevented by an acquaintance with the principles of Dr. Currie, but because they likewise contribute to

* It may at first sight appear paradoxical to say, that the warm bath is useful by removing heat. But this is certainly the fact, for when properly used, it will always tend to diminish morbid temperature; at the same time, its good effects are partly to be ascribed to the power which it evidently has in equalizing the circulation.

raise false prejudices and fears in the minds of the faculty, and of the public in particular.

The morbid temperature in typhus is sometimes partly dependent on extraneous causes, as the heat and closeness of the chamber, or an extraordinary quantity of bed-coverings; and even under such a state, I have occasionally known patients with a dry and burning skin actually to complain of chilliness, their too officious attendants carefully excluding every breath of air, and drawing the curtains closely round the bed, to prevent them, as they supposed, from catching cold. When similar causes to the above are present, the practitioner cannot immediately ascertain whether the morbid temperature of the skin be strictly febrile or not: and therefore he ought to remove them, and wait at least half an hour, that he may entirely satisfy himself as to this point; for if the cold water were rashly dashed at once over a patient, confined in such a warm, stifling atmosphere, the result might be injurious, if not dangerous. Nor should any one, when about to advise this powerful remedy, rely implicitly upon his sense of touch, or upon the feelings of the sick, in regard to the degree of preternatural heat, but ascertain it precisely by an accurate thermometer.

The cold and warm affusions may be serviceable not only by exciting a new train of sensations, but by removing morbid heat and irritation, and by redu-

cing the force and frequency of the pulse, as well as restoring the natural functions of the skin. It is chiefly with a view of cooling the surface of the body, that both these expedients have been used and recommended; as if modern practitioners had imbibed the speculation of Plato, who thought that a continual fever proceeded from an excess of fire. But I have never seen them really advantageous, except when they diminished the action of the heart and arteries, and produced something like a healthy perspiration; and I suspect that, whatever may be their immediate influence on the temperature and nervous system, their permanently good effects are to be attributed to the changes which they induce in the circulation. With the exception perhaps of venesection, there is not a more powerfully antiphlogistic mean, in certain fevers, than the affusion of cold water, which has also this peculiar advantage, that it is highly invigorating; while phlebotomy and other depletory measures have a tendency to debilitate, when pushed beyond a certain point. It is, however, in the simplest forms of typhus, that this remedy is so generally efficacious; and the warmest admirers of Dr. Currie surely cannot deny, that, in the ardour of his inquiries, he has overlooked some of the most interesting varieties of idiopathic fever, in which cold water is either wholly inapplicable, or of limited utility, as shall be afterwards exemplified.

From all that has been remarked, it will be manifest, that cold and tepid water may be profitably applied during almost the whole period of excitement. It is in this stage, too, that purgative medicines are so exceedingly useful, and they ought to be exhibited every day, either a little before or after the application of the warm or cold affusions; a judicious combination of both these means being much more efficacious, than either of them singly employed.

Boerhaave has said, that the strength is not easily reduced by evacuations, in the commencement of febrile disorders: and if this observation be more particularly applied to those procured by purgatives, it must be allowed to be most correct; the debility caused by their repeated operation being far less than might have been previously supposed, and trifling when compared to the general good which they produce. The world is greatly indebted to Dr. James Hamilton, senior, for having so firmly established the usefulness of aperient medicines, which, notwithstanding the testimonies of some ancient and modern physicians in their favor, were either thought pernicious, or not generally admitted in contagious fevers, before the publication of his work,* than which none perhaps of greater value has appeared, in the medical republic, since the days of Hippocrates. For by it

* Observations on the Utility and Administration of Purgative Medicines in Several Diseases.

the author has not only fixed the treatment of many important diseases on incontrovertible principles, but overthrown some pernicious theories, opened new views for future inquirers, and, like Bacon, pointed out the way by which they may be most successfully explored.

Seldom less than four or five alvine evacuations should be daily procured, during the stage of excitement; and as the bowels, for the most part, are then preternaturally torpid, tolerably full doses of medicine should be given, that no time may be lost in the repetition of small and ineffectual ones.

In the commencement and whole course of typhus, it sometimes happens, that the bowels are in an apparently lax state: but if the evacuations be carefully inspected, they will almost always be found very fetid and mud-coloured, or slimy, chopped, and scybalous; and therefore aperients are indispensably requisite, to remove the abdominal irritation, of the existence of which such stools afford the strongest presumption.

Purgatives seem beneficial, by unloading the intestines of feces and excrementitious matters, which, when retained, excite and keep up much general irritation. But is it not exceedingly probable, that they have another and far more salutary effect, in restoring healthy secretion, and in removing irregular

distributions of blood from the head, liver, and other vital parts? The full operation of aperients sometimes reduces the morbid heat of the skin, and the morbid force of the pulse, almost as effectually as the affusion of cold water or venesection;—consequences which surely indicate, that their action extends further than the mere removal of fecal matter from the intestinal canal. In truth, a simple *laxative* will be found to effect little in the first stages of fever, when a brisk *purgative* produces the most unequivocal advantage; a demonstrative proof, in my opinion, that the benefit resulting is not altogether from the mechanical dislodgement of the feces, as the excellent author of the work on purgative medicines, before mentioned, seems inclined to believe.

My observations on the qualities of febrile urine have not led to any practical results of consequence. Having, however, often remarked an alarming increase of the pyrexial symptoms from a retention of urine, I cannot refrain from suggesting, that practitioners should make a point of ascertaining whether the patient passes it every day in sufficient quantity; and they should not allow themselves to be deceived, when it constantly dribbles away, for while that is the case, the catheter in general is absolutely necessary,—not to mention the great attention which is then requisite to prevent excoriations of the perinæum or adjacent parts. But if the bowels be kept open from the beginning, a complete or partial sup-

pression of urine will hardly ever be witnessed in typhus, or indeed in any other fever.*

Perhaps the period is fast approaching, when diffusible stimuli will be universally prohibited in the earlier stages of almost all ardent fevers. It may be laid down as a principle, that they are very detrimental in typhus during the stage of excitement; and upon this point I can speak with much confidence, having not only frequently seen the baneful effects of their exhibition, but the salutary change which has followed their abstraction. It would be quite as rational to give a half intoxicated man a tolerably free allowance of ardent spirit, with a view to make him sober again, as to attempt to restore, at this time, a typhous patient, by the administration of wine; for he may be said to be in some degree intoxicated by the stimulus of the fever, and he will therefore be more affected by every glass of cordial that is administered. It has been contended, that wine does not stimulate so much in fever as in health; but so far from this being the case, it has always appeared to me to stimulate much more, while the stage of excitement continues. Strange as it may appear, it is still the custom of many practitioners to pour in large quantities of wine indiscriminately, throughout all the stages of the genuine

* It may be commonly remarked, in febrile complaints, that where a small quantity of urine is secreted, the sediment is proportionably copious; and, on the contrary, where a large quantity is secreted, the sediment is proportionably scanty.

typhus. If, by any chance, the energies of the constitution should finally prevail against both the disease and this injudicious treatment, the recovery is falsely attributed to the wine, and thus a most dangerous error is at once propagated and respected ;—an error by which an immense number of febrile patients has been destroyed. When strong stimulants are exhibited at the time, and in the manner above noticed, they have a powerful tendency to produce inflammation or congestion in the visceral organs, and thus to render the chance of recovery at the best very doubtful. So far from their being admissible in this stage, the lightest and coolest regimen is imperiously demanded, and even every animal substance, with the exception of milk, ought to be strictly prohibited.

There is generally some remission of the fever in the simple typhus towards the morning, and the patient will almost always be much less oppressed at that than at any other period of the day ; but as the excitement gains ground, the debility increases, and may be observed to be the greatest when the exacerbation is at its highest point in the evening. And surely this fact, which I have repeatedly witnessed, goes far to prove, that the debility in this stage is merely the consequence of the excitement. If, as some have contended, the debility were real at this time, how comes it to pass, that it is invariably increased by diffusible stimuli and animal food, and diminished by purgatives, spare diet, and whatever

allays or lessens the excitement? When the doctrines of debility were so prevalent, it was the established practice to give strong wines and broths during the whole period of excitement, and the fatality was extremely great: but now, wherever the antiphlogistic regimen has been adopted, instead of those pernicious means, the disease has been generally found remediable.

With respect to diet, I have always endeavoured to make it as simple as possible, being firmly persuaded, that there is no disease in which the stomach should be less pampered than in typhus; and this seems to be pointed out by the loathing of food, with which it is attended. Moreover, it will be found impossible to support the strength of the patient by a strong and varied diet, so long as the excitement continues; nay, it will have a directly contrary effect, for by augmenting the febrile irritation, and disordering the digestive and biliary organs still more, it may eventually induce local inflammations, or congestions of a fatal description. Milk mixed with two parts of water and a little arrow root, milk-whey, barley water, thin gruel, and the like, will answer every purpose of sustaining the powers of the system, without exciting the circulation. There is a strong popular prejudice against the use of milk in fevers; but popular prejudice is sometimes merely another name for popular error, and it is most assuredly so in the point under consideration. Hippocrates sim-

ply declares, that milk is bad* in febrile distempers; but Sydenham and Heberden speak of it very favorably, and my own experience has amply confirmed their recommendation.

At all times of the second stage, the admission of fresh cool air, frequent changes of linen, thin bedcoverings, cold sub-acid drinks, quietness, and the abstraction of every extraordinary stimulus, are particularly calculated to allay the universal excitement and irritation, and are in general highly acceptable to the sick.

In the milder cases of the simple typhus, little will be needed in the stage of collapse, the powers of nature in general, assisted by light nutriment, being fully adequate to the recovery. But in the more urgent examples, the treatment in several particulars must be materially different from that laid down in the two former stages. Evacuations, more especially, ought not now to be induced, but with the greatest circumspection, for several cases have come to my knowledge, in which patients, thus far advanced in typhus, have sunk very rapidly, from the repeated operations of a strong cathartic. Generally speaking, in this stage two moderate dejections will be

* Popular errors, on medical subjects, are mostly the errors of the physicians of former ages. It is, perhaps, not improbable, that the one here mentioned, in respect to milk, originated with Hippocrates, and, having been embraced by others, has thus been transmitted down to our times.

quite sufficient in twenty-four hours. There are, however, some exceptions to this rule, which it may not be improper to notice here.

When the exhibition of purgative medicines has been neglected in the beginning of typhus, an extraordinary accumulation of feces often exists in the last stage, and occasions an alarming oppression of the brain, accompanied with great prostration of the natural powers, flushed face, suffused eye, delirium, or some degree of stupor, high breathing, foul tongue, and quick, uneven pulse. In such cases, the abstraction of the smallest portion of blood would be eminently hazardous; but I have frequently seen the most agreeable change induced by full doses of brisk purgatives, such as calomel with jalap, aided by stimulating enemata, the strength of the patient being supported during their operation by moderate allowances of good wine. In the advanced stages of typhus, when cerebral oppression is thus secondary of loaded bowels, much sometimes may be effected by the combined employment of purgatives and cordials, care being taken that the former act with tolerable freedom, and that the latter only be given to obviate the debility, without too powerfully exciting the general circulation.

In the last stage of typhus, when the bowels have not been regularly moved in the preceding stages, it is not uncommon for patients to pass frequent, small,

loose, fetid stools, which are sometimes mixed with slime and blood. Yet such an occurrence does not prohibit aperients, but rather pressingly indicates the necessity of their exhibition: since the distressing looseness is the consequence of offensive sordes retained in the bowels, and ceases when they are effectually removed by active purgatives; though it is always prudent to give a moderate opiate soon after their operation, and to support the strength with cordials, as in the instance before mentioned.

If the above circumstances fully authorise the liberal employment of purgative medicines in the last stage of typhus, there are others which seem almost entirely to prohibit them. If patients be kept in very close apartments, and even if their bowels be daily attended to during the first and second stage, it may be occasionally observed, that on the approach of the last stage, frequent, copious, bloody stools are passed without any offensive odour. About the same time, too, dark petechiæ begin to shew themselves upon the extremities, which at first are only few in number, and appear as if a drop of very black ink had been allowed to dry here and there upon the skin, or as if they could almost be rubbed off by the fingers; but they soon become numerous, and spread over different parts of the body, and at last are generally accompanied by discharges of blood from the nostrils, mouth, bladder, or bowels. Under these circumstances, I have almost always observed, that

aperient increased the effusions of blood, and caused a sudden depression of the vital powers. Indeed, whatever plan may be pursued, there is no calculating upon success; but the free admission of fresh air, the liberal allowance of lemon juice, mixed in a little Madeira wine and water, with small, repeated doses of opium and aromatics, are the means on which most reliance may be placed. In two cases of the above description, I have been permitted to make examinations after death, but, with the exception of some trifling congestions, no decidedly morbid appearances were discoverable, nor were there any coagula of blood in the intestinal canal, though much had been previously evacuated. As instances of this kind are almost invariably fatal under the common modes of practice, it is evident that we are still ignorant of their real nature. Repeated reflections upon them have led me to suppose, that the cause of death is some peculiar change which takes place in the blood itself, rendering it unfit for the purposes of vitality. The inhalation of the exhilarating gases has never, I believe, been recurred to in such cases: is it at all probable, that some of them might be beneficially used? Yet, by this query, it is not my design to recommend any of them to actual trial, but merely to suggest the consideration of them to those who may hereafter investigate this subject. The humoral pathology no doubt abounded with absurdities; yet, I am fully satisfied, that there are several diseases, to which it might, in some degree, be just-

ly extended, and, therefore believe that its almost entire abandonment has been prejudicial, by leading us from the investigation of various morbid states of the fluids, and of the means best fitted to correct them.

Sydenham and some later writers seem to have thought, that petechiæ were the effect of increased arterial action, while others again have considered them as the strongest proofs of general relaxation. It has appeared to me, that they sometimes arise from increased action, as in the stage of excitement; at other times from relaxation of the extreme vessels, as in the stage of collapse; and frequently from a dissolved state of the blood, which undoubtedly occurs in the last stage of many fevers. When petechiæ proceed from increased action, they are at first of a bright red colour; when from relaxation, they are generally of a darkish brown; and when from a dissolved state of the vital fluid, they have an inky appearance, and are almost always accompanied with effusions of very dark blood from other parts of the body, as the nose, bladder, or intestines.

Different kinds of purgatives being mostly requisite in the different stages of the simple typhus, some remarks on the effects of those in common use may perhaps serve to shew what sort ought to be selected. Calomel has probably a more general influence than any other cathartic; it excites a degree of nausea in the stomach, emulges the biliary ducts, dislodges scy-

bala most effectually, corrects morbid secretions, and with small doses of the antimonial powder,* or of the tartrite of antimony, promotes perspiration as well as purges; and this combination, therefore, is well suited to the stage of excitement. Castor oil, in one respect, resembles calomel, for it completely unloads the alimentary canal of its contents; besides, it tends to allay tormina or tenesmus, and every species of irritation about the rectum.† Jalap and rhubarb seem chiefly to exert their power on the larger intestines: when conjoined with calomel, they are very certain in their operation, and when given after it, especially rhubarb, have a tendency to remove the tenesmus and the mucous discharges, which it frequently produces exhibited alone. The neutral salts, such as the sulphate of magnesia, have a peculiar effect on the inner coat of the bowels, evinced by copious liquid stools; yet they are not to be trusted to singly, because they may, though given day after day, leave a considerable quantity of scybala in the arch of the colon. Magnesia often allays irritability

* Oxidum Antimonii cum Phosphate Calcis. Phar. Ed.

† It is very common to give castor oil, made into an emulsion by the yolk of an egg, or a small portion of alkali; but this is a most exceptionable prescription, for I have repeatedly remarked, that it is very liable to occasion vomiting, and is generally uncertain in its operation. One of the best modes of administering castor oil is to mix it in lemon juice and water, or in warm coffee. Under this simple form, it sits most easily upon the stomach, and operates with the greatest certainty. The dark coloured castor oil, or that called West Indian, is more efficient as a purgative than the pale coloured, or that called East Indian.

of the stomach, particularly when accompanied with bilious, or sour watery vomitings; it may therefore be advantageously combined, in many cases, with other aperients, and, when followed by lemon juice, is frequently a certain and powerful purgative. Aloes, and similar drugs have most influence on the lower part of the intestines, particularly when prescribed in the form of pill. From these hints it will be apparent, that calomel, antimony, jalap, rhubarb, and the like, with neutral salts occasionally, are most proper in the first and second stage, and that, with some exceptions already mentioned, aloes and the mildest laxatives are most proper in the last stage of the simple typhus.

It is in the stage of collapse, that the principles laid down by the philosophic Dr. Currie may be deceptive, in regard to the application of cold water. For it not unfrequently happens, that a glow of heat is diffused over the surface, and if the thermometer be applied, a temperature somewhat above natural will even be manifested, which may continue for one or two hours together, though it is seldom longer stationary at one time. Yet if the patient be narrowly examined, some parts of the body will be found rather cooler than others, and symptoms of general relaxation will be pretty evident. At this period, neither the cold nor the tepid affusions can be applied to the whole surface without great risk, though partial ablutions of the hands, face, breast,

and feet, with cold or warm water, are often highly refreshing, as are likewise the temporary admission of cool air, and very small draughts of any cool liquid; such being the difference between the partial and the general application of the same or similar means. If a man were excessively fatigued by a long journey on a summer's day, the sudden dashing of three or four gallons of cold water over his naked body would almost chill him to death. But let his hands, face, and feet be quickly washed in cool water, give him a little cool wine and water to drink, and you diffuse new life throughout his languid frame;—something similar may often be remarked, where partial ablutions and small portions of cool drinks have been employed in the last stage of the simple typhus.*

Having expressed myself strongly against the exhibition of wine in the first and second stage, candour requires me to confess, that I have often seen it useful in the last, as indeed has already been hinted,

* A few solitary and remarkable cases have been published, to shew that cold water, under the form of beverage or aspersion, has been freely and advantageously used in the very last stages of fever, when the debility was extremely great. But such rare cases only form an exception to a general rule, and ought not to influence our ordinary practice. A striking instance of this nature may be found in the Life of Cellini who, when exceedingly exhausted by a protracted fever, drank very copiously of cold water, which produced the most decided benefit. See Vol. I. page 339, of the Life of Benvenuto Cellini, a Florentine Arist. Translated from the original by Thomas Nugent, L. L. D. F. S. A. In two volumes. London: printed for T. Davies, 1771.

in speaking of cerebral oppression from loaded bowels, and of apparent diarrhœa, attended with a state of real debility. But on the first approaches of the stage of collapse, wine should be sparingly administered, and its effects carefully noticed. If it diminish the irritation and render the skin universally moist and warm, the tongue softer as well as cleaner, the breathing slower, and the pulse less frequent and fuller than before, the propriety of proceeding in its use is strongly indicated. Whereas, if the irritation become greater, the skin hotter, the tongue drier, the breathing quicker, and the pulse smaller and more rapid, its further employment is most certainly contra-indicated; though it should not always be abandoned on the first, but sometimes have the chance of a second trial, after the expiration of a few hours.

Madeira is perhaps preferable to every other wine, being very grateful, and at the same time remaining lightly upon the stomach, but it should not be given in an undiluted state. It has long been usual with me to mix it with four or five parts of milk; and under this form it makes both an excellent drink and diet, in the advanced stages of typhus. It is impossible to fix the precise quantity of wine that ought to be given, as it must be varied according to the nature of the existing symptoms, the age, constitution, and previous habits of the patient. As some kind of rule, however, about two-thirds of a pint of Madeira,

or other similar wine, in twenty-four hours, may be deemed amply sufficient for an adult, who has lived temperately. Although in the last stage of the simple typhus a moderate allowance of diluted wine be often necessary, the free employment of strong stimulants, at such a time, may be compared to the violent lashing and spurring of an exhausted animal, in order to keep it in motion; for in both cases the vital principle would immediately be raised by the applied powers, but, failing in proportion to each preceding excitement, it would be rapidly and irretrievably sunk, by the frequent repetition of such treatment. When the stronger wines excite too much, the weaker, such as claret, may be tried; and if these should not answer, small, repeated draughts of mild brisk ale or porter may often be given, with excellent effect. Indeed, in many cases, fresh malt liquor quenches the thirst, supports the strength, and allays the irritation decidedly better than wine; and I know no diffusible stimulus which, upon the whole, is preferable to it in the last stage of typhus, for it is well suited to give that degree of vigour to the system, requisite to remove those partial congestions, which often exist at that period in combination with general debility. Dr. Stoker of Dublin, in a sensible but incomplete work,* has spoken highly of yeast in the advanced stages of fever; and I have often had

* A Treatise on Fever, &c. By William Stoker, M. D. London: printed for Longman & Co. 1815.

reason to be satisfied with its power of gently opening the bowels, cleaning the tongue, and diminishing thirst, especially when administered alternately with ale. As soon as an appearance of convalescence is observed, diffusible stimuli of all kinds must either be lessened or entirely withdrawn, because too liberal or too long a perseverance in their use may occasion a relapse of fever, complicated with some open or masked inflammation of the viscera.

At the thirty-first page I have noticed a peculiar modification of the simple typhus, which occurs as well in feeble hysterical women, as in constitutions broken down by the long use of ardent spirits, and which is, now and then, attended with a wild and almost maniacal delirium. The chief remedies for it are mild purgatives, the warm affusions, and small, frequent doses of opium, combined with calomel as an alterative. It is surprising how rapidly the stage of collapse sometimes supervenes in habitual drunkards, who should always have an earlier and a more liberal allowance of stimulus than those who have lived in an abstemious manner, otherwise they will generally sink under the evacuations, which may be indispensably necessary to remove the disordered condition of certain organs.

The diet should be light and nutritious in this stage, consisting of arrow root, sago, beef tea, calf feet jellies, or milk. One or two simple articles

should be chosen, and strictly adhered to, as they will answer infinitely better than a complication of various things. It is a nice point at this crisis to avoid giving the patient too much or too little nutriment, but even here perhaps excess is the most dangerous extreme. Great anxiety to prevent the sick from sinking, often induces their attendants and friends to give much more food than can possibly be digested, and it either lies as an oppressive load upon the stomach, or induces an exhausting vomiting or diarrhœa. When the weakened condition of the digestive and assimilative organs are considered, it cannot but appear, even from reason, that small portions of plain, simple food, given at stated intervals, will best support the remaining strength of the system, and this is really confirmed by experience. Heberden has said, that fresh air is one of the best cordials in fever; and a similar remark may be extended to sleep, with additional force. Whenever, therefore, patients fall into a tranquil slumber, they should hardly ever be disturbed to give them food, until six or seven hours have elapsed:—such a repose is most desirable, and will sometimes renovate nature, when her faculties seemed prostrate beyond the power of the medical art.

Perhaps it may be asked, why I have not mentioned venesection as a remedy for the strictly simple typhus? but I may appeal to every practitioner of experience and candour, to support me in the asser-

tion, that it may be safely dispensed with in the majority of cases. When typhus appears from the first under its least complicated form, the early adoption of the plan laid down will in general not only ward off inflammatory symptoms, but those putrid ones, which are apt to arise out of them; and thus it is calculated to prevent the necessity of blood-letting in the second stage, and the free administration of stimulants in the last. At the same time, whenever, in defiance of the means already recommended, there is an early threatening of some visceral inflammation, the immediate employment of general or local blood-letting, promptly followed up by the application of blisters, will generally be found necessary. It may indeed be regarded as an axiom, that bleeding, if it should not do good, will hardly ever do any harm, in the *commencement* of febrile diseases.

It has already been hinted, that fever and inflammation may supervene during a state of convalescence from the simple typhus. The causes of such an occurrence may generally be traced to an imprudent exhibition of stimulants, to a neglect of the bowels, or to an unseasonable exposure to cold. When patients are once deemed convalescent, we are too apt to leave them to pursue their own inclinations; but instead of being so careless, we should warn them against what might be injurious, and likewise point out what is most proper. If any secondary fever should arise, from some of the causes enumerated

above, it ought to be ascertained, whether it be an affection of simple excitement, or complicated with some visceral inflammation. If it be a simple fever of excitement, the antiphlogistic regimen, and a few brisk purgatives, will soon remove it; but if it be conjoined with any visceral inflammation, to these means, venesection and blistering must be generally united, though the quantity of blood drawn must be cautiously regulated by the strength of the patient. This secondary fever, however, is most frequently of a simple character: and when it is combined with inflammation, the pleura or the liver is the part commonly attacked; a stich in the side, and an accelerated pulse being often the first warnings of the approaching danger.

It is finally to be observed, respecting the treatment of the simple typhus, that much may be safely attempted in the first and second stages, and the practitioner is highly culpable, who neglects to avail himself of every favorable occasion which they offer. But in the last stage, particularly of severe cases, it is dangerous to attempt a great deal; and the *nimia diligentia*, the extreme officiousness which leads to a variety of prescription, must be studiously avoided, since the time for demonstrating the decided efficacy of medicine is unfortunately past; and perfect quietness, ventilation, cleanliness, regular supplies of proper cordials and food, with occasional opiates to allay irritation, will often do more towards restora-

tion than all the boasted specifics in the world. In short, we should, in some degree, imitate the practice of Asclepiades, who, as Celsus informs us, allowed his patients little respite in the beginning of fevers, but administered even to their luxuries in the advanced stages.

Many other causes beside that of contagion, produce a febrile state, attended with simple excitement: but from whatsoever cause the simple excitement may originate, the treatment requires to be regulated by similar principles; and it is especially needful in all such cases, to diminish the preternatural action of the heart and arteries at an early period. For although the excitement at first may be so equably diffused as to exhibit no marks of topical inflammation, yet in its progress, topical inflammation may arise if any one organ had previously happened to be weaker than another. Whenever in fact, excitement is developed, the sooner it is checked the better, lest it ultimately lead to inflammation, or exhaust the patient by its mere continuance; and if proper measures were always opportunely applied in fevers of a simple excitement, they would rarely be productive either of inflammation or of serious exhaustion.

TREATMENT OF THE INFLAMMATORY TYPHUS.

If the lancet be used in all the various forms of typhus, without due regard to the period of the dis-

ease, the quantity of blood drawn, the manner of abstracting it, and to the age, habits, and constitution of patients, it must doubtless be often followed by fatal consequences. But, on the contrary, if it be employed with discretion at an early period of the inflammatory or congestive varieties of the complaint, it may be proved to be an instrument of the greatest utility, effecting what no other can so well effect—the preservation of the structure of the main parts in the living machine, when endangered by preternatural determinations or accumulations of blood. Forty years ago, purgative medicines were prohibited, through the prevalence of false hypotheses, but happily their efficacy is now universally acknowledged; and before forty years more shall have elapsed, the efficacy of blood-letting, I doubt not, will be as firmly established in certain varieties and stages of most contagious fevers.

The Greek, Latin, and Arabian physicians used phlebotomy in almost all acute fevers; and every one knows that it was the favorite practice, not only of our illustrious countryman Sydenham, but of many of his contemporaries and successors, who boldly thought and acted for themselves, amidst the fluctuations of fashion and of theory. There truly seems an uncommon agreement between the best practical authorities of ancient and modern times, with regard to the propriety of venesection in certain forms of

idiopathic fevers,* whilst every new fact that is brought to light tends more firmly to establish its usefulness, when discreetly employed. During the rise and progress of the fatal doctrines of debility and putridity, the lancet was condemned in many fevers, and by authors who, with a singular inconsistency, continued to commend the sagacity of Sydenham. But the speculations of Cullen and other men of genius, which have so long obscured our pathological views, are at length passing away like clouds before the spreading light of more favored times, and we may reasonably hope, will soon entirely disappear from the horizon of the medical world.

As reformations in physic, like reformations in politics, often extend further than their first movers intended, perhaps at no distant period there will be a danger lest, in abandoning the notions of debility and malignity, we should run into the opposite extreme, and consider some idiopathic fevers more inflammatory than they really are in this country. An error of this kind, I conceive, has been committed by some recent writers of note, who, in their respective essays, have frequently confounded the bilious remittent with the true typhus fever, and thus unconsciously given the latter too high an inflammatory colouring. Probably the numerous and very excellent

* The reader will find a full confirmation of this assertion, in an interesting Essay on the Agreement betwixt Ancient and Modern Physicians. By John Barker, M. D. London: printed for G. Hawkins, 1748.

treatises published by the practitioners in warmer climates, where fever presents a more ardent aspect, and is attended with higher excitements, and where the efficacy of blood-letting has staggered even the faith of some staunch Brunonians, have powerfully contributed to produce the recent changes in many important points of opinion and practice. Yet with whatever disadvantages it may be attended, the lapse of a few years will enable the physicians of Great Britain to appreciate and apply venesection as correctly as other evacuants. The grand principle of early depletion may be properly extended to almost all acute fevers, idiopathic and symptomatic; although it cannot always be carried so far in the former as in the latter, nor perhaps in temperate as in tropical regions; and although, like other general principles, it requires to be modified by the nature of the existing circumstances. The successful application, too, of this principle, depends much upon a judicious choice of the means, and the time and mode of their employment, which will be shewn in detailing the treatment of the inflammatory typhus.

In a former part of this work, it has been stated, that I do not consider inflammation as an inseparable and essential part of typhus; but, having so frequently seen that disease combined with inflammation, I have simply used the term inflammatory typhus to express that combination, without attaching to it any abstract or speculative opinion. It has

not been uncommon in medical writings to oppose the attribute typhous to that of inflammatory, as if the existence of the one was incompatible with that of the other: but this, like many other prejudices which have the sanction of great names, is founded on theory, rather than experience, since, beyond all dispute, a genuine typhus may be complicated with an acute or sub-acute inflammation. It does not follow, because this disease originates from a specific contagion, that it can never be joined with the excitement which produces inflammation; for we have numerous instances of specific contagions occasioning fever with inflammation,—as those which, to mention a few examples, give rise to the Egyptian ophthalmia, the scarlet fever, and the small pox. Yet setting aside analogical reasonings altogether, typhus has been so repeatedly presented to me in conjunction with inflammation, that I am fully confident, to be successfully encountered, it must often be considered and treated as an inflammatory disorder. Yet, desirous to avoid rashness on the one hand, and timidity on the other, I shall endeavour to shew when venesection is proper, and when improper.

It is in the acute species of inflammation, sometimes commencing on the first, second, or third day of the second stage of typhus, for which, provided it be seated in a part of vital importance, copious venesection is indispensable. At an early period of such cases, the strength is depressed, but not subdued;

and as the depression is then principally the effect of the topical disorder, venesection, by diminishing or removing that disorder, diminishes or removes the load which impeded the vital functions, and the strength, compared before and after the operation, is therefore increased, instead of being lessened, a fact which I have frequently noticed. But it must never be forgotten, that general blood-letting is only advantageous, or even admissible, in the beginning or acme of the acute inflammation, because when it has existed for a few days, it is almost invariably combined with universal exhaustion; and venesection will then hardly ever remove it, but contribute to precipitate the patient to the grave, by its powerful impression upon the whole system. When called, therefore, to any case of typhus, complicated with an acute inflammation, the practitioner should ascertain, as precisely as possible, the duration of the latter, and the state of the general system. If the topical affection has been but of short continuance, and the vigour of the constitution be merely weighed down, and not really exhausted, let him discard the fears associated with false doctrines, and promptly abstract blood, according to the seat and extent of the inflammation, and till the local pain and general oppression be relieved. But if, on the contrary, the topical affection has continued for some days, and there are symptoms of a present or an approaching collapse, let not the evidences of any local derangement induce him to hazard general venesection,

as he values the life of the patient, and his own reputation. I have been often consulted in typhus, at the critical moment when the inflammation had advanced so far as to render the propriety of decided practice very questionable, and yet not entirely to preclude the employment of depletion. In such instances of uncertainty, it may be assumed as a principle, that local is preferable to general blood-letting; and in conjunction with blisters and purgatives, it will sometimes surpass the expectations of the practitioner. There are circumstances which will even justify the stimulaneous employment of local blood-letting and diffusible stimulants in typhus; as for example, when the stage of collapse approaches, and the head or chest, from the previous one of excitement, has become oppressed with an engorgement of blood, which is rapidly overpowering the vital energy. In such lamentable instances, although blisters, laxatives, and mercurials, may be conjointly serviceable, the immediate chance of relief is from the local abstraction of blood, by leeching or cupping, and the exhibition of wine; the first with a view to relieve the topical accumulation, and the last to support the system under the evacuation. What was formerly said about the combination of purgatives with cordials in the last stage of simple typhus, may tend to illustrate the union of these seemingly inconsistent, but sometimes efficacious means, against the conjoint use of which the ingenious Dr. John Brown has so indiscriminately protested.

General and local blood-letting, then, it will be perceived, are sometimes absolutely necessary in typhus; at the same time it must be recollected, that though the reduction of an acute inflammation may be paramount to every other consideration in the treatment, yet the system cannot bear so large and repeated losses of blood in this fever as in simple acute inflammations, such as gastritis, unconnected with contagion. In support of this opinion, I might confidently appeal to the results of my own practice; but proofs must be familiar to every unbiassed and experienced physician. We may indeed have ocular demonstration of the fact, by attending to external inflammations complicated with the genuine typhus, which surgeons well know require a less abstraction of blood than those conjoined with a purely symptomatic fever. Nevertheless, the distinctions of typhous and inflammatory fever have, in a practical view, been insisted on too forcibly by many authors, who erroneously conceive, that these affections require almost opposite modes of cure; whereas they have many appearances in common, and are remediable upon similar principles. Nothing perhaps can be of more practical consequence, than to note accurately the various stages of acute diseases, from their commencement to their termination; for unless this be done, the disputes may be endless about their modes of treatment, which must correspond to the leading phenomena of each stage. In all fevers of an open character, or in which heat and arterial re-

action are developed, there are, to pass over the first two grand stages, one of excitement, and another of collapse; and it is in the former that depletion is so excellent, while it is always dubious, and often extremely dangerous in the latter. In violent cases, the stage of excitement soon passes away, and then come those malignant symptoms, as its effects, about which so much has been written, and which, viewed independently of the preceding one, have contributed to mislead so many pathologists and practitioners. Let the circumstances under which remedies are used always be carefully noted, and the points at issue, with regard to the treatment of fevers, will soon be satisfactorily settled.

When the presence of an acute inflammation in typhus imperiously calls for venesection, the first operation should be made as effectually as possible, for the reasons already advanced. The change which a temporary suspension of animation produces, is often strikingly beneficial in phlogistic diseases. Fully satisfied of this, it has long been my practice to order patients, labouring under acute inflammations of the viscera, to be bled until some faintness supervened, that syncope if possible might be insured after the blood has been restrained. But, as in the ordinary manner of performing venesection, syncope can only be caused by very copious depletion, it is a desideratum in the treatment of the inflammatory typhus, to induce it with as little loss of blood as

possible; and this may be best accomplished by bleeding from a large orifice, the patient standing, properly supported, erect upon the feet;—for ten, twelve, fourteen, or sixteen ounces taken away in that position, frequently have the desired effect, under all the forms of the inflammatory typhus. When there are obstacles in the way, to prevent the performance of venesection in the above manner, it may be done while the patient is placed on the breech, with the trunk perfectly erect; for even in that posture, faintness will come on much sooner, and consequently with a smaller loss of blood, than when the body is recumbent. Or the vessel may be opened as the patient lies flat upon his back, and about five or six ounces allowed to flow, when his trunk should be suddenly elevated to a right angle with his lower extremities, and this will often cause an immediate degree of sickness, and soon lead to faintness or syncope.

The largest quantity of blood which I ever ordered to be drawn, in the inflammatory typhus, amounted in all to about fifty-four ounces. The case occurred in a robust and middle aged man, and was from the commencement attended with pleuritis, though it had unquestionably originated from contagion. Early on the second day of the attack, twenty ounces of blood were abstracted from the arm, which produced a marked relief; but in about twelve hours, the inflammatory signs again becoming prominent, eighteen ounces more were taken away, with even a better effect than

before, and the patient appeared to be convalescent for about two days. But having drunk too freely of strong ale, the pleuritic affection returned with violence, for which sixteen additional ounces of blood were drawn, and a larger blister applied to the side affected. From this time the pectoral symptoms rapidly receded, yet the patient had a tedious recovery, on account of the state of weakness to which he had been reduced. It has, however, rarely happened that I have had occasion to open a vein so often, having in general found a first, or at most a second decided blood-letting quite sufficient, when properly assisted by other means. In fact, I am no advocate for large repeated abstractions of blood in the inflammatory typhus, but rather trust to one or two well-timed and moderate attempts by the lancet, and then place my chief reliance upon saturating the system with mercury.

Perhaps few physicians in this country have given calomel with more freedom than myself in febrile disorders. Having imbibed an early and strong bias, that its whole efficacy depended upon its purgative operation, I remained sceptical for a long time, as to its possessing any other power in fevers. But cautious and reiterated observations have at last convinced me, that next to venesection, it is one of the most powerful anti-inflammatory agents with which we are acquainted. It will be found that very few patients perish in inflammatory diseases, where ptyalism is

clearly established. In general terms, inflammation may be denominated a loss of balance in the circulating system, and *calomel having a direct power in equalizing the circulation,* is a most suitable remedy for that affection. But the ordinary mode of administering it will do little good, nay, will often tend to bring it into discredit. Before its exhibition in the inflammatory typhus, blood should always be drawn, and the bowels freely and frequently opened. Then without loss of time, it should be given in at least eight grain doses, combined with nearly a grain of opium, and repeated three, four, or five times in twenty-four hours, until the mouth be obviously affected. In cases of more than ordinary violence, I have often given it in scruple doses; and so far from having had reason to regret this practice, it has generally proved most beneficial, by rapidly saturating the system, and thus striking at the very seat of the inflammation. The combining of moderate doses of opium with large ones of calomel, has most frequently an admirable influence, not only in causing a complete change of action in the system, but in promoting an universal, warm perspiration, which tends speedily to remove every trace of the internal disorder. But, lest it should be thought that I am too partial to calomel, as a remedy capable of equalizing the circulation, I shall return to the consideration of depletion, in order to be somewhat more particular in regard to its employment.

In almost all cases, in which there is manifestly a preternatural accumulation of blood in a part of importance, attended with an universal excitement, general blood-letting should be adopted first, and local blood-letting afterwards. Because the general blood-letting, if carried sufficiently far, will immediately diminish that violent action of the heart and arteries by which the inflammation is chiefly maintained; while the local blood-letting will make a still further impression on the heart, and may likewise induce a change of action in the part affected on the principle of sympathy or revulsion. Since the first edition of this work passed through the press, I have made numerous experiments as to the power which local blood-letting has over the action of the heart, and have found it infinitely greater than I had previously supposed; so much so indeed, that I am now induced to believe, that the *principal* efficacy of local blood-letting rather depends upon this than any other cause. In the course of these experiments, too, a remarkable and unexpected fact was presented to my observation; namely, that the action of the heart may frequently be weakened by small quantities of blood abstracted by leeches, when moderate or larger quantities would be required to produce a similar effect by venesection from one larger vessel; but this, however, is more especially the case when the excitement does not run intensely high, and in all examples where it does run intensely high, the general should always precede the local bleeding. Thus if the chest, or the belly

be the seat of the inflammation, a vein may be opened at the arm; and as the benefit is generally greatest when the blood is rapidly abstracted from a great vessel, the orifice should be made very large. This is a point of the first importance, and ought never to be neglected in inflammatory affections of an urgent nature. About an hour after decisive venesection, several leeches may be applied over the integuments of the chest or abdomen, nearest to the site of the uneasiness; but as in visceral affections the principal efficacy of local blood-letting depends upon its influence on the heart, it should be continued until it sensibly weakens the action of that organ, which may be known by its lessening the force or the frequency of the pulse. And though it may seem surprising from the comparatively small quantity of blood which they abstract, yet practitioners will generally find the pulse reduced immediately on the removal of several leeches from the skin; and where this effect is not observable at that time, glasses exhausted of air should be applied over the punctures, until an evident reduction of the pulse succeeds. The cupping glasses, invented by Mr. John Welsh, surgeon at Haddington, answer uncommonly well, as I have proved by many trials, though they are merely exhausted by suction with the mouth;* and this method is generally preferred by patients, but especially in febrile diseases, to the ordinary mode of cupping and

* For an account of these very useful glasses, see vol. xi. page 193, of the Edinburgh Medical and Surgical Journal.

scarifying, over which it has one very obvious advantage, since it does not add the stimulus of pain to the febrile irritation. But nevertheless, where a considerable and rapid detraction of blood from the skin is required from the urgency of some threatening symptom, cupping and scarifying may be preferable, on account of the saving of time.

When inflammation of the brain or its appendages has taken place in typhus, I have usually bled from the arm first, and where that did not give decided relief, recommended the opening of the temporal artery in preference to the application of leeches; and the happiest effects have often followed these two methods used in quick succession, but especially when cold cloths have been freely applied to the head at the same time.

Dr. Stoker introduces an interesting fact, on the authority of an experienced surgeon, who, "scarcely in any instance, when opening the temporal artery is prescribed for patients in fever, fails of taking as much blood as may be required; though during forty years, in which he has been surgeon to the County of Dublin Infirmary, he found the operation generally unsuccessful when directed in other diseases, either from the difficulty of puncturing the artery, or of getting a sufficient quantity of blood from any orifice that could be made."* In almost every instance, where the

* See page 27 of Dr. Stoker's Treatise on Fever.

brain is seriously affected in the open forms of typhus, the arteries of the head will be found much more distended and pulsating than natural; thus at once affording a strong evidence of vascular excitement, and a much greater facility to the topical detractions of blood. The anterior branch of the temporal artery may be opened where local blood-letting is expedient, at a short distance from the trunk, which, in more urgent cases, may itself be punctured, a little below its separation into the anterior and posterior branches. When the operation is done on the anterior branch, the vessel ought to be divided after a sufficiency of blood has been drawn; but when the main trunk of the artery has been opened, it should be taken up in the usual way, otherwise there might be the risk of hemorrhage, or of a future aneurism. Surgeons often fail in abstracting as much blood as is wanted from some part of the temporal artery, not because it is absolutely impossible to obtain it, but because they divide the artery, instead of merely puncturing it lengthways. In inflammatory affections of the cerebrum, some have conceived, that if, instead of the temporal artery, the external jugular vein be opened, you abstract blood returning from the brain, and directly relieve the inflammation, by removing a portion of that which produced it, and thus clear the channel for a freer transmission of the remainder to the heart. It seems to have been forgotten, however, that this reasoning is only applicable to the *internal* jugular vein, for what *immediate*

connection has the external one with the brain? Perhaps no peculiar advantages result from performing the operation at the external jugular; but in very young subjects it may be sometimes more easily punctured than the veins in the arm.

In all acute inflammations, seated in vital parts, it is of great consequence neither to confide entirely in one powerful measure, nor in a combination of secondary means;—but rather to employ, from the first, the most approved antiphlogistic agents, successively or together, that their influence may be so exerted as to produce a complete change of action in the circulation, with the least possible loss of time. Most of the ancient physicians, and even Sydenham himself, trusted to venesection in the first instance, and the expedients which they afterwards used were comparatively inert:—but under this plan many cases might prove mortal, which would be readily arrested by a judicious conjunction of active remedies. The free exhibition of purgative medicines, immediately after venesection, is one of the greatest improvements in modern medicine, as it respects the cure of acute fevers: and if, to the agency of those two means, that of calomel as an alterative be added, we give a summary of what ought *always* to be attempted, not only in the inflammatory typhus, but in all the varieties of acute visceral inflammations. Nevertheless, how superior soever be the united efficacy of bleeding, purging, and mercu-

rials, there is yet an application that should not be disregarded. Much contrariety of opinion seems still to prevail, relative to the propriety of using blisters in typhus. If my observations be correct, they should not be employed in the inflammatory variety, until evacuations have been premised; otherwise they will commonly excite a general irritation, which will more than counterbalance any local advantage derived from them. I have, however, generally seen them serviceable, when applied to the vicinity of the topical affection, soon after the employment of venesection and purgatives. It also deserves to be noticed, that they should hardly ever be recommended at a very late period, except where there is a tendency to coma, when they sometimes, being applied over the head, contribute to rouse the latent energies of life.

My experience does not enable me to speak with perfect confidence concerning the general effects of the affusions of cold water, in the inflammatory typhus. It would be most unreasonable to expect, that they should prove as highly efficacious in it as in the simplest form of the disease; yet their application in both probably requires to be regulated by the same principles. In the inflammatory typhus the heat is almost always above the natural standard, but the skin, particularly when the abdominal viscera are affected, is frequently moist, while there are distinct sensations of chilliness. A combination of such

symptoms preclude the cold affusions, but not the warm bath, for it may be beneficially used after bleeding and purging, as it has a power of equalizing the circulation, by inducing a flow of blood towards the surface. In some cases of typhus, which were complicated with cerebritis, and in which the skin was very hot and dry, I have seen the cold affusions used with evident advantage, *before* bleeding and purging. But if any practitioner should flatter himself that they will, unassisted, subdue a fixed visceral inflammation in typhus, he will find his hopes utterly fallacious;—although, if applied when the surface is preternaturally hot and dry, and no sense of chilliness present, they will often lessen the intensity of the excitement, and thus add to the power of the subsequent depletion. I am fully persuaded, that they should hardly ever be employed *after* copious venesection, which reduces the vigour of the system too much to enable it to maintain a proper temperature under their application. In the North of England, it is not uncommon for typhus to be combined with catarrhal symptoms; and when those symptoms have not been urgent, I have found that they did not preclude the use of the cold affusions, but, on the contrary, yielded to their application, in conjunction with purgatives and blisters. Notwithstanding all that has been written, it still remains for future inquirers more fully to ascertain, in what modifications of inflammatory affections the cold affusions ought to be used, and in what rejected.

Simple and philosophical as the principles of Dr. Currie are, when limited to some forms of typhus and the scarlet fever, yet they are not alike applicable to some other febrile diseases; at least I shall afterwards particularly consider one, produced by intoxication, in which the aspersions of cold water may be used with success, when the whole surface is covered with perspiration, a circumstance which he imagined entirely to prohibit them.

Most of the preceding remarks are intended to refer to typhus, combined with the acute species of inflammation. If any one should object to the pathology as too phlogistic, and to the practice as too active, I can only observe, that both the one and the other are founded upon personal observation and experience; and that they have enabled me to save the life of many a patient, who would have inevitably perished under the feebler plan which, unfortunately, great names and early associations once made me respect as well as pursue. It is incumbent on me, however, to guard the practitioner against carrying depletion too far, even in the acute form of the inflammatory typhus. When a decided impression has been made upon the topical affection, we should desist from the employment of very active measures, and either leave nature to exert her own energies towards restoration, or to second them by moderate treatment. It cannot be too often repeated, that the system sooner sinks under depletion in

typhus, than in merely symptomatic fevers; and this is a peculiarity of the disease which should never be lost sight of by the medical attendant.

The acute inflammations of typhus sometimes originate from causes, which neither the physician nor the patient can controul, and by the rapidity of their progress endanger life from the very onset. But this is not altogether the case with the sub-acute kinds of inflammation which, being the gradual results of increased action, may often be prevented by timely care, and which, when actually formed, may proceed for some days, before they bring life into immediate hazard. The prevention of these latter affections may be best effected by frequently taking a cautious and comprehensive view of all the symptoms, so that if any part be threatened by an attack, it may be immediately warded off by local blood-letting, blisters, purgatives, or similar means. Thus if there be too great a determination of blood to the brain, the patient should either be frequently placed in an easy chair, as Sydenham recommends, or the bed upon which he lies should be raised at least eight or ten inches at the top, by placing blocks of wood under the upper poles, that he may rest on an inclined plane, with his head considerably elevated. And this simple precaution, with the free admission of cool air, cold applications to the head, the exclusion of light and noise, brisk aperients, and perhaps a few leeches to the temples, will frequently

prevent an attack of inflammation. If the pleura, lungs, or mucous membrane of the trachea be predisposed to inflammation, leeching or cupping, a blister afterwards, small doses of antimonial medicines, and saline purgatives, will be amongst the best preventives. If any of the abdominal viscera be threatened, the warm bath, large cathartic enemata, a tolerably full dose of calomel, determined to the bowels by the sulphate of magnesia, and the abstraction of a few ounces of blood from the surface of the belly, will often obviate the necessity of having recourse to more active expedients. When the subacute inflammation really exists, it will be best overcome by a suitable perseverance in the antiphlogistic plan. One moderate bleeding from the arm will be generally necessary, after which local blood-letting, blistering, and purgatives, in combination with mercurials, will for the most part suffice to effect the cure. General venesection, or arteriotomy, may be recommended with propriety at a much later period than it would be adviseable in those cases of typhus which are complicated with the acute form of inflammation; for when the local morbid action does not advance so quickly, the supervention of the stage of collapse is proportionably delayed. In an instance of this kind, which lately came under my inspection, the subject of it sickened on the eleventh day of the month, and gradually became worse, until the nineteenth, when my first visit was made. The patient was then extremely restless, shrunk on forcible pres-

sure being made over the abdomen, which was somewhat fuller than natural, and he complained of an unquenchable thirst, with a constant burning heat at the stomach. Purgative medicines having been previously exhibited without arresting the complaint, I ordered a vein to be immediately opened at the arm, and, placing the patient in the erect position, allowed the blood to flow till it was stopped by approaching syncope. About ten ounces of blood only were drawn, the crassamentum of which became extremely cupped and buffy; yet the relief obtained was permanent, and the recovery rapid, through the assistance of a blister, and purgatives of calomel and jalap. In this case, blood was abstracted on the ninth day of the fever, with the most obvious utility; and on some occasions I have seen the temporal artery punctured to great advantage at as advanced a period, when the head was oppressed by a sub-acute inflammation of typhus. My experience does not enable me to limit the time at which the lancet may be employed in such affections, but the earlier the better, when the evidences of visceral inflammation are once sufficiently revealed. The case above is not brought forward to shew that phlebotomy may generally be adviseable at so advanced a stage of the disorder, but merely to prove that it may sometimes be resorted to with advantage, even when the sub-acute inflammation has been allowed to proceed far without any decided interruption. Though some modern authors have recommended, as Langrish did

in the last century, repeatedly small general venesection several days later than in the instance reported, yet, at such a time, I cannot but consider this practice as exceedingly dubious, and would myself prefer, in most cases, the occasional use of local bleeding with the alternate use of laxatives, and of calomel and opium. After a few of its diurnal revolutions, the stage of excitement begins to decline, and symptoms of universal collapse appear, during the existence of which it is extreme rashness to use general blood-letting. Indeed, the blood taken from a large vein is then frequently in a thin dissolved state, so that it remains a fluid gore, without coagulating; and whenever this is observed, it is the most certain proof that the operation has been done at an improper time. Unfortunately, the physician is often consulted in febrile disorders when they have become all but desperate by their long continuance, and if he should attempt to save the patient by a daring measure, will generally have the mortification of seeing him sink rapidly after its employment. In the worst cases of this kind, powerful expedients are hardly ever admissible, for where they once succeed, they will fifty times fail; and perhaps all that is left for the practitioner to perform is, to give a conscientious prognosis, and, if possible, to palliate the predominant symptoms.

In delicate constitutions, and in persons confined to close, ill-ventilated apartments, the inflammations

attendant on typhus are generally of the sub-acute kind, and in them may, for the most part, be removed by seasonable and moderate depletion. The advantages of local blood-letting are perhaps greater than has been commonly conceived. Beddoes has stated that the effect of a blister extends to a foot deep; and probably a similar opinion might be advanced as to local blood-letting, which frequently induces a material change in the general circulation. After the removal of a few leeches from the skin, I have often thought that I could perceive something like the old doctrine of revulsion and derivation exemplified; the blood flowing so fast from the neighbouring to the punctured parts, as to be at last restrained with some difficulty. There is a free communication of blood-vessels between the external and internal parts of the thorax, which often renders local blood-letting of great utility, in those slight inflammations of the chest, so common in typhus; and even though the connection by anastomoses is not so great between the cavity of the belly and its integuments, yet in the obscure, sub-acute abdominal inflammations, it is a mean of efficacy on the principle before explained. When the brain is affected, opening the temporal artery, as in the acute form of inflammation, is to be preferred to the application of leeches; for the topical disorder may frequently be traced to an augmented excitement of the arteries about the head, or at least it is always connected with a morbid activity of those vessels. In the sub-acute inflammations of

typhus, locally disturbed actions sometimes exist with a general depression of the circulation; and for such cases topical blood-letting is peculiarly calculated, as it relieves without exhausting.

For some years past, I have closely directed my attention to the effects of purgative medicines in hepatic, gastric, and other abdominal inflammations; and the result has been most satisfactory, particularly in the sub-acute modifications, sometimes commencing with typhus, but far more frequently originating during the progress of the fever. In affections of this kind, it will very often be found that the bowels have been constipated, or in an irregular state before or during the attack, which makes it necessary that they should be as speedily and thoroughly opened as possible; but, on account of the irritability of the stomach, this cannot always be accomplished without difficulty. The contents of the lower part of the intestines should first be evacuated by large and repeated injections, containing at least a quart of fluid; but if twice that quantity, or even more can be administered, it will be still better, provided much feces be retained. The benefit resulting from large enemata, injected with a sufficient force, from a suitable syringe, or an ox's bladder properly fitted up, has not been rightly estimated; but, from repeated trials, I can recommend them as remedies truly worthy of notice in abdominal inflammations, often inducing copious motions in a very short time, and

contributing to allay retching and vomiting, so that the medicines afterwards prescribed will not be rejected by the stomach. But their effects in general are merely temporary, and therefore aperients should be ordered immediately after their operation, to act upon the whole course of the canal. Under such circumstances, small doses of certain drugs, especially of calomel, are as liable to be rejected as large ones; and even when retained, they either do not operate at all, or only very defectively, and may do much more harm than good, by their immediate irritation, and by occasioning a loss of time, every moment of which is precious in the beginning of such disorders. Full doses of purgatives, therefore, should be prescribed, which may not only remove the excrementitious matters from the bowels, but cause some evacuation of serum from the vicinity of the inflamed part, and thereby produce all the advantage of a local abstraction of blood.

As there are some rules of treatment equally suitable to the acute and sub-acute inflammations conjoined with typhus, I shall notice them here, rather choosing to make repetitions, than to run the risk of leaving my meaning imperfectly expressed. In every modification of visceral inflammation, the bowels should be very freely opened at first, and kept daily soluble, until the dangerous symptoms disappear. For many years it was my practice to confide entirely in the co-operation of bleeding, purging, blistering,

and an antiphlogistic regimen; but since I have had such numerous demonstrations of the efficacy of mercury, I have never omitted to administer calomel, so as to insure its purgative and specific effects at the same time. My general plan, therefore, has been to give one very large dose, or two tolerably free doses of it in the day, followed up by some other active cathartic, that plentiful evacuations might be procured before bed-time,—while during the night I have given it in divided doses, with opium, by way of accelerating its more complete absorption. Some have contended that opium is dangerous in inflammatory affections, insomuch as it may mask the symptoms, and thus lull the practitioner into a fatal security. But this reasoning is more specious than solid, for, after copious depletion, no remedy has appeared to me more efficacious, and I speak from an extensive observation. Every attentive physician must have remarked, that in almost all inflammatory diseases, where the lancet and purgatives have been boldly applied, a state of great and universal irritation often succeeds, which if not opportunely allayed, rapidly sinks the strength of the patient; but for which opium is particularly fitted, generally allaying the turbulence of the system, and frequently inducing tranquil sleep. Yet as this state is for the most part connected with a sort of subdued degree of the topical affections, it is always prudent to combine the opium with calomel, which, by equalizing the circulation, obliterates every vestige of local disorder.

While the system continues uuder the influence of fever, ptyalism is not easily produced, and the most timid may then give calomel with far more freedom, than in those diseases unattended with morbid heat and excitement. As soon as ever the fever begins to give way, this alterative should be exhibited with great care, because, as the constitution is then verging towards its natural state, its specific action will much more readily take place. Sometimes when this preparation is prescribed, even in conjunction with opium, it acts more forcibly on the intestines than desirable, producing many copious, dark stools, followed by small, frequent, slimy, and bloody discharges. Whenever these occur, the bowels should, in the first place, be cleared by a moderate dose of castor oil, and then opiates with mucilaginous drinks will speedily remove the irritation.

The dose of calomel and of opium should be varied according to the nature of the symptoms, and the effect intended to be produced. Where, from the violence of the acute inflammation, or from the long continuance of the sub-acute, the structure of some vital organ is endangered, calomel should be given in large doses, combined with a due proportion of opium, that the system may be saturated as soon as possible. To fulfil this intention, in protracted cases it will be best to administer a scruple of calomel with two grains of opium for the first dose, and afterwards to give small and frequently repeated doses of both

these medicines. Whereas, in other cases, from five to eight or ten grain doses of calomel, with nearly one grain of opium, every six hours for the first day, and in half the quantities afterwards, will be found to excite ptyalism the soonest; so liable is the operation of this alterative to be modified by a difference of habit or of incidental symptoms. Where it is deemed adviseable to have both the purgative and specific operation of calomel together, it may be administered in pretty full doses about four times in twenty-four hours, for two or three days, the opium being given in such small proportions, as merely to facilitate its absorption, without eventually preventing its operation as an aperient. If the brain be inflamed, large and frequent doses of calomel should be given, since the habit will then be impervious to the action of small ones;—and as the bowels are mostly very torpid, opium ought to be sparingly administered, or rather wholly omitted, until the violence of the topical disease has been subdued. Besides, as Mead first observed, it seems to have a specific power of disturbing the action of the vessels in the brain; yet even where cerebritis has existed, it frequently proves useful after proper evacuations, particularly when united with calomel, which modifies this specific power to an extraordinary degree. Wherever the brain is inflamed, the functions of the liver will commonly be more or less disordered, and this is another reason why calomel should be liberally prescribed.

When opium is given expressly to diminish irritation, the first dose should be tolerably large, say two or three grains; and the subsequent ones of course much smaller. But it must be constantly remembered, that opium ought not to be exhibited in visceral inflammations, until an impression has been made by free evacuations; except indeed where there is excessive pain, and then it may often be used with advantage, in conjunction with venesection. In some affections of the abdomen, attended with spasm of the intestines, or with unusual irritation, I have occasionally found it impossible to move bowels, without the previous exhibition of opium. In such cases, about 120 drops of the tincture will often do very well, made with two ounces of mucilage into an enema, which should not exceed that measure, else it will not remain long enough to produce a proper effect. When opiates fail in allaying pain or irritation, the tepid bath sometimes proves highly beneficial, especially after depletion by the lancet and cathartics. If a warm and universal perspiration break out soon after its use, and continue for some time, it is generally a most favorable sign, few cases having been fatal in my practice where it occurred. When calomel and opium do not excite perspiration, the opium may be omitted, and the compound powder of ipecacuan sometimes substituted with great advantage; for this preparation, added to the calomel, often powerfully determines the blood to the surface.

Aperient medicines should be more freely exhibited in inflammations of the head and abdomen than of the chest; because they have a much greater power of deriving the fluids from the two first mentioned parts, and because in the last, copious and frequent purging has a tendency to diminish expectoration. Yet the bowels should be daily moved even in thoracic inflammations, in which, after adequate evacuations, moderate doses of antimonial powder, or of the tartrite of antimony, with small ones of opium and calomel, are frequently very useful. This combination should be so managed, as to excite and keep up an alterative and nauseating effect, which as well promotes expectoration as arrests the morbid condition of the circulation. When the trachea is inflamed, an antimonial emetic will generally answer an excellent purpose, not so much by expelling accumulated phlegm, as by influencing the whole vascular system, but especially the capillaries of the membrane affected, and those of the skin.

In the chronic species of the tracheal affection, before described, which is now and then the attendant of typhus, early emetics of antimony, leeches and blisters successively applied near the larynx, laxatives, small doses of calomel and opium, and moderate ones of the balsam of copaiva, with an occasional tepid bath, free ventilation, and an abstemious regimen, are the best means. In the advanced stages, however, of this modification of

the disease, I have not seen any thing available; although Mr. Croudace, whose case was formerly alluded to, recovered when extremely emaciated, on being removed to an airy situation in the country. The first articles which stayed upon his stomach were light hasty pudding, and a little milk, to which, and the influence of a pure atmosphere, he chiefly attributed his recovery.

From what has previously been said, it is scarcely necessary to add, that the strictly antiphlogistic regimen should be adopted in the inflammatory typhus, at least till the urgent symptoms be overcome. And even when the remission has been obtained, the practitioner should still direct a light, cooling diet; for it is well known, that when any part has once been inflamed, it is for some time afterwards very susceptible of the same morbid action. Moreover, in almost every case, in which the system has been much depleted, a re-action of the heart and arteries takes place during convalescence, which may be readily pushed on, by too stimulating food, to re-produce fever and inflammation. For want of attending to this, not only open and palpable inflammations may be occasioned by errors of diet, but insidious and concealed affections of the viscera or their membranes, which lead to dropsies in the cavities, or to actual disorganization.

It sometimes happens in the inflammatory typhus,

as in other complaints of a similar character, that the inflammation relapses after it had been apparently subdued, and this is more especially the case, when the lungs are the seat of the inflammation; but in all such instances, we ought never to be deterred from the use of the lancet on the recurrence of the urgent symptoms; and local bleeding, with blisters to the chest, will be particularly serviceable as secondary measures, on account of the influence of small abstractions of blood by leeches over the heart, and of the free anastomoses of vessels between the external and internal parts of the thorax. It is a remarkable fact, that I have hardly ever seen relapses of inflammatory diseases where the mouth was affected by mercury, where the bowels were kept regular, and where the diet was antiphlogistic at the same time; and I cannot but believe, from the consideration of many cases, that relapses would be much less frequent in vital inflammations, if the three circumstances, here pointed out, were more generally regarded.

Sometimes when local inflammation has been subdued in typhus, a state of great mental and bodily irritation succeeds in peculiarly susceptible habits. After a remission of two or three days, the skin again becomes pungently hot, the pulse quicker, the tongue drier; and, particularly towards the evening, there is a bright hectic flush upon the cheek, while the countenance has an expression of suffering. The patient is fretful, complains of fugitive pains in dif-

ferent parts of his body, and often sighs, as if he were labouring under some serious affliction. His sleeps are at first short and agitated, attended with mutterings or startings, and he awakes unrefreshed and anxious as before. In a short time he becomes watchful and delirious at nights, and has a rough, parched tongue, trembling hands, ferretty eyes, and is impatient of light and noise. If opportunely employed, the warm bath, active purgatives, and small repeated opiates, are often remedies of great power in this secondary fever of irritation. The evening exacerbation is the best time for using the bath, in which the patient should be immersed for about fifteen minutes; and immediately after his removal to bed, he should take about twenty-five drops of the tincture of opium, and, being thinly covered, ought to be kept in a still, dark chamber. If the first opiate should not induce rest, the same dose may be repeated in about six hours; one great object in the beginning of this disorder being to procure long and tranquil sleep, which is frequently the best restorative. If the skin should continue hot and dry throughout the day, the warm affusions may occasionally be applied, and fresh cool air liberally admitted. Milk is perhaps the best general diet, but when animal broths do not stimulate too much, they may also be given in moderate quantities. This kind of fever sometimes passes on to hectic, without the formation of matter any where, and sometimes imperceptibly leads to slow organic affections; cir-

cumstances which much more commonly arise out of the inflammatory, than out of the simple variety of typhus.

When the first edition of this work had passed almost completely through the press, some excellent remarks were published by Dr. Dickson, respecting a contagious fever which prevailed in the Russian Fleet:* but circumstances conspired to prevent me from seeing that paper at the time, otherwise it should have been noticed in the preface, on account of the strong corroborations which it afforded to the pathology and treatment which I laid down in the inflammatory typhus; and as the observations and experience of this enlightened physician were personal and independent as my own, the coincidences of opinion and practice are peculiarly gratifying to me, in now referring to his well-written paper. Dr. Dickson observes, that the appearances on depletion were strongly illustrative of the frequency of visceral inflammation, in the fever which he saw and described; for the brain, lungs, and contents of the abdomen, were severally attacked, among the subjects who laboured under this disease. From reflection on numerous facts, it appeared to Dr. Dickson, an inevitable conclusion, that those remedies which arrest an inflammatory action at the commencement, pre-

* See vol. xii. p. 158, of the Edinburgh Medical and Surgical Journal.

vent the graver and malignant symptoms which characterize the last stage of such fevers; and this conclusion was amply borne out by the results of his experience in the fever in question, for decisive bleeding and purging at the beginning generally answered the best purpose. Excepting as a purgative, Dr. Dickson does not appear to have given mercury, and he correctly points out the great difficulty of inducing ptyalism in fevers of a highly ardent form. But certainly my success upon the whole has been much greater in all diseases of an inflammatory nature, since I have employed mercury in conjunction with blood-letting and purgatives; although I am ready to confess, and even to urge, the necessity of evacuations, so long as the stage of excitement shall continue to be marked with an excess of heat and arterial re-action. It will be found remarkably true in all ardent fevers, that the system resists the operation of mercury while the heat is intense; but lessen that heat by bleeding and purging, and then the bold exhibition of calomel generally breaks down the morbid actions with resistless energy. It is upon these principles, that I have first bled decisively in inflammatory diseases, next given active purgatives of calomel, jalap, and neutral salts by the day, and during the night, again freely exhibited calomel, but with small doses of opium; and every trial which I have made of this method tends the more firmly to convince me of its efficacy. In ardent fevers of every kind, but especially when the brain is affected, the

specific effects of calomel may be much more readily produced in combination with purgatives than without them, while the excitement predominates; and as this is not the case under the ordinary circumstances of health, it is a fact well worthy of recollection, in affections of excitement or inflammation.

It has appeared to me, as it has done to Dr. Dickson, that decisive blood-letting is, in the main run, preferable to small repeated venesections, in the beginning of inflammatory diseases: but there are cases, as he seems fully sensible, where the constitutional powers are so extremely weak, or where the inflammation has so far advanced as really to have exhausted those powers, in which small repeated bleedings are the best; and in illustration of this particular point, few works can be consulted with more advantage than that of Dr. Mills, which certainly contains many practical observations of importance.

Before concluding my remarks on the inflammatory typhus, I beg leave to warn the speculative and the inexperienced from rashly concluding, that inflammation exists in every instance in which the head, chest, or belly are seemingly affected, since opinions deduced with precipitation, from a few leading symptoms, may often be extremely deceptive. Practising in a populous district, I have not unfrequently been called to typhous patients in a state of high delirium, with dry, burning skin, parched tongue, flushed face,

and red eyes, covered with a load of bed-clothes, confined in close, heated chambers, and allowed the most improper beverage and diet. On freely ventilating the rooms, extinguishing the fires, removing the superfluous coverings, using the tepid affusions, and ordering purgatives and an antiphlogistic regimen, I have seen a most salutary change induced in a short time, which has been rendered permanent, by a perseverance in these very simple means. Other patients again have come under my care, who had been treated, in the first instance, much in the same way as those just noticed, some of whom were troubled with cough and oppression of the chest, and some, whose bowels had been neglected, with much uneasiness and some tension of the belly;—but on prescribing a blister for the first mentioned, and a brisk purgative for the last, with the cooling regimen in both, all the disagreeable symptoms have given way, and recovery has speedily followed. None but those who have had opportunities of contrasting the cooling, antiphlogistic treatment with the hot and stimulating, can duly appreciate the superiority of the former; or indeed be aware what a pleasing amendment may be frequently produced, in mismanaged patients, by the abstraction of heat, noise, and diffusible stimuli, and by the substitution of fresh cool air, sub-acid drinks, a spare diet, and remedies which move the bowels, and lessen general excitement, and what are called local determinations.

The descriptions which have been given and the remarks which have been made, in relation to the inflammatory typhus, may serve to illustrate the nature and treatment of various affections, attended with similar conditions of the circulation, local and general. But as what are termed simple inflammations of the viscera are, upon the whole, the most common and the most important in this country, they shall be treated of before the rest.

SIMPLE INFLAMMATIONS OF THE VISCERA.

Most simple inflammations of the viscera proceed from the influence of the weather, and in such cases there is generally a distinct cold stage, with evidences of an oppressed state of the heart; and it is not until the hot stage has been developed, that any impartial man can take upon himself to decide as to the actual existence and site of the topical affection. In truth, the venous congestions, which take place in the first or cold stage of these examples, appear to be the cause of the general excitement which follows; and that excitement again produces in some parts a marked arterial disturbance which we denominate inflammation, and the seat of which is in all probability determined by some weakness, latent in the organ affected previously to the occurrence of the cold stage. This opinion, indeed, seems almost confirmed when we consider, that if different individuals be attacked with fever after a cold stage, induced by

the changes of the weather, different organs will be inflamed on the emergence of the excitement; and if some of them had been known to have a previous weakness in any particular organ, that organ will be sure to bear the principal proofs of the inflammation. But it must not be supposed from these hints, that I consider all simple inflammations of the viscera as arising out of an excitement occasioned by venous congestion, and favoured by some local predisposition; for an inflammation, as of the bowels, may arise directly from a local irritation in the part, or it may arise indirectly from a distant irritation, which brings on a general excitement, and that again produces the inflammation.

In the common systems of nosology, and of the practice of physic, no notice whatever has been taken of the sub-acute forms of visceral inflammation, the descriptions entirely relating to the acute and palpable forms. This has always appeared to me a most serious omission, and it has probably been the occasion of fatal errors. Many young practitioners are only taught by the loss of patients, that inflammations of the viscera may proceed to a mortal termination, without any of the strong and distinct symptoms mentioned in the methodical distinctions of the day, as the constant and indispensable indications of such disorders. The doctrine of an acute, a sub-acute, and chronic inflammation might be extended to the phlogistic affections of the

viscera ; but as we are only concerned with the two former species in this place, and as I have thrown out some hints respecting the last in a recent publication, I shall proceed to make a few general observations on the treatment of the acute and the sub-acute forms of simple inflammations of the viscera.

In regard to the treatment of simple inflammations of the viscera, little more will be required, than to shew in what their treatment differs from those complicated with the genuine, contagious typhus. The principal difference in the curative plan lies in this—that in simple inflammations, depletion may be carried further in the onset, as they are generally more intense than those complicated with typhus ; but in both the same rules are applicable to the advanced stages when universal collapse is approaching ; and in both also depletion may be advantageously employed at a much later period in the sub-acute, than it can possibly be in the acute form. In the beginning of my practice, I used to order about fifteen ounces of blood to be drawn on the accession of any acute and simple inflammation of the viscera, and the same quantity, two, three, or even four times afterwards, at intervals of six or eight hours each, if the symptoms continued urgent, and the strength of the patient unsubdued. These repeated venesections, together with active purgatives, blisters, and the antiphlogistic regimen, constituted the means on which all my hopes of success were founded. Many cases

certainly did well under this the common practice of the time, yet it is only candid to add, that several proved mortal. In investigating the causes of death, by morbid dissections, I discovered that such repeated bleedings sometimes made little or no impressions upon visceral inflammations; and I had previously observed, that venesection in general only succeeded where it had been followed by considerable faintness or by syncope. Reflection upon these facts at length induced me to bleed in the commencement of sthenic disorders, until the patients were about to faint, or until the pulse was rendered very feeble. This method was soon found incomparably superior to the one which had been previously followed, when properly aided by other antiphlogistic measures: and yet on the average, less blood was extracted, because one, two, or at most, three bleedings answered, whereas, under the former mode, the operation had frequently been four or five times repeated, a practice which I have now entirely abandoned.

If it were fair to draw a conclusion from the facts which have come within my observation, I should say, that it is a pretty general error among us, the practitioners of England, to bleed too frequently in the progress of inflammatory affections, and yet without sufficient decision. By drawing blood repeatedly, at long intervals, with regard rather to some precise quantity than to any immediate and particular effect, the strength of the patient is too frequently exhausted,

while the inflammation still proceeds unimpeded to its fatal termination. But the efficacy of venesection does not so much depend upon the quantity of blood drawn, as upon the effect produced. However indecisively the major part of us in this country may recommend the lancet, some late authors of note appear to me to have employed it with too daring and desperate a hand, as if the whole chance of recovery was in the abstraction of as large a portion of the vital fluid as possible in a given time. It is difficult, nay impossible to form any rule, respecting the quantity or degree of depletion, that shall be applicable to all the various cases of particular diseases. Two cases of abdominal inflammation lately came under my care, in which the symptoms were nearly alike. The subject of one of them was a robust man, who on the first day of the attack was bled to the amount of twenty-five ounces, which produced syncope, and for a time apparently arrested the inflammation; but it returned on the following day, when about twenty-five additional ounces were drawn, and with the same effect as before. On the third day, however, the symptoms of abdominal inflammation again became urgent, and forty ounces of blood were now taken away, before faintness occurred: but this last bleeding was effectual, and the patient recovered very well, though slowly on account of the very copious depletion. The subject of the other case was a young lady, neither remarkable for strength nor delicacy. Soon after the first attack,

eight ounces of blood were taken away, which produced syncope, and a marked remission of all the symptoms; yet on the following morning, there was an obvious return of the abdominal inflammation, for which about eight ounces more were abstracted. This second bleeding caused a long continued faintness, but on recovering from it, the patient expressed herself completely relieved, and from that time rapidly regained her strength and health. Now here were two instances of an equally alarming nature, one of which required ninety ounces of blood to be drawn for its removal, whereas the other only required sixteen. It must therefore appear evident, that the imposition of any arbitrary measure is not to be relied on in inflammatory diseases, since the practitioner should be guided by the effect, rather than by the amount of the blood abstracted: and surely if we can make a moderate quantity completely effectual, it is all the better, as thereby the strength of the patient will be proportionably saved. Yet, on the other hand, we must not be turned from our purpose by unfounded fears about the danger of decided depletion, in cases of extraordinary severity. Half measures are always to be deprecated in the commencement of highly sthenic disorders; for even if they should break the force of the inflammation, which is hardly to be expected, they will generally leave a subdued degree of it, and thus indirectly lead to chronic derangements of structure, or to serous effusions, if such membranes as the pleura and peritonæum be affected.

It is not perhaps possible to form a correct and general rule as to the time that venesection ought to be repeated in simple inflammations. In those of an acute nature, if the first bleeding should not give a marked relief, the second should not be long delayed. It has been customary with me for some time, to wait half an hour, or even longer, with the patient after the operation, to see its full effect, not only upon the pulse, but upon the local affection and the general habit. If in that short period I could not perceive a manifest change for the better, I have generally ordered the arm to be re-bound, and permitted the blood again to flow, until the pulse fluttered beneath the finger, from approaching faintness. And at this second bleeding, when the blood has not issued in a full stream from the orifice first made, I have never hesitated a moment to recommend the opening of another vein, that it might be taken away as rapidly as possible, to induce that temporary collapse of the system, so super-eminently serviceable in all inflammatory diseases. Since I pursued this plan, I have not, upon an average, bled more than twice in the most intense inflammations, nor abstracted, in all, more than about forty ounces of blood, where the case has been under my own management from the beginning. In some instances, however, the quantity has been considerably under, and in others considerably above this average, as may have been perceived in two already reported. Where faintness or syncope has occurred after this use, mo-

derate bleedings have appeared to me quite as beneficial as large ones followed by one or other of those effects. But where large bleedings have been followed neither by faintness nor syncope, they have not by any means appeared so beneficial as moderate ones producing either of those states. It may perhaps, therefore, be a desideratum to enquire, whether any new mode could be discovered of inducing faintness or syncope by moderate losses of blood, in inflammatory diseases, that the strength of patients might be saved as much as possible. Under the present practice we are often compelled to draw considerable quantities of blood by the lancet before we can attain our object: but as I have found on numerous trials that faintness can generally be induced by moderate losses of blood from the application of leeches, so I would recommend this practice wherever it is an object to save the strength of the patient; though in all cases of an urgent nature general venesection should be employed first, and the local bleeding afterwards as a decidedly useful auxiliary. It is a common opinion of the vulgar, that the *first bleeding* is always beneficial in inflammations. Now it is well known that most persons faint the first time they are bled; and on this account there may really be some foundation for the truth of this opinion. But what has been said about the efficacy of faintness or syncope in inflammatory diseases, must not be extended to those of a truly congestive nature, in which bleeding should hardly ever be continued until such

an effect occur. But this shall be particularly illustrated in another place.

The quantity of blood which I have ordered to be taken away at once in acute inflammations has varied from eight to forty ounces. Yet in common I have seldom extracted less than sixteen ounces at a time, and very rarely more than thirty. Indeed in nine cases out of ten, which have come under my own eye, faintness or syncope has appeared before the last mentioned quantity has been extracted? but then I have always endeavoured to accelerate one of those effects, by the means specified in the cure of the inflammatory typhus. Some authors, I know, coolly talk about drawing fifty, or even more ounces of blood at a time: this certainly may be sometimes done in the acute cases of this country; and I doubt not but it may often be readily accomplished in tropical climates, where the excitement of febrile diseases is so impetuous. But, waving all considerations as to its general practicability in this country, I think such excessive depletion at one time only justifiable in some most extreme cases. On a few particular occasions I have ventured as far as forty ounces of blood at once and certainly with great advantage to the patient; though I should by no means be partial to this as a general practice. In the course of my experience I have occasionally observed, that where blood had been so very copiously drawn at one time, it either produced a state of universal

collapse, from which the system never rose again,—or was succeeded by indications of violent excitement of the heart and arteries, attended with much nervous irritation. It is also remarkable, that on examining the bodies of some patients who had lost great quantities of blood in this way, I found much congestion in the veins of the brain and liver, with more or less serum effused in some parts.* Yet a little reflection will easily explain these appearances. When patients are bled to so excessive an amount, as greatly to impair the energy of the heart and arteries, the natural balance between the arterial and venous systems cannot be maintained afterwards, and there is consequently a preternatural accumulation of blood in the veins. When bleeding, therefore, is carried beyond a certain point in inflammatory diseases, it may actually occasion a state similar to that which it was intended to remove, though the congestion will be seated in different vessels, and attended with an irretrievable collapse, and sometimes with effusions of serum in the cavities.

These hints are not thrown out to terrify the medical student or practitioner, but rather to guard

* Dr. Seed has recently published, in the first volume of the Medico-Chirugical Journal and Review, some most interesting experiments on excessive blood-letting, the results of which coincide with these observations, and which, independently of that, deserve the highest consideration.

him against those extremes, into which the best and wisest men are sometimes liable to run. The experience of every year convinces me more and more of the great superiority of promptly applying decided measures in the beginning of acute diseases, instead of wasting the most precious moments in feeble, secondary, and often renewed attempts, which generally end in the disappointment of the physician, and the death of the patient. All the most efficacious means should be made to bear directly on the disease in a very short time, and then the mildest measures should be adopted, that nature may be allowed to renovate chiefly by her own powers. Bleeding is certainly the first in the order of remedies, and purgatives the next. When these have produced their influence, blisters near the part affected, and the speedy saturation of the system by calomel, combined with opium, will mostly complete the cure. The united or successive impulse of a few powerful agents such as these, will not weaken the patient more than may be absolutely necessary for the reduction of the inflammation, provided they be not carried further than prudence, or the exigency of the case may require. In many instances, it is indisputably as dangerous to push depletion too far, as to stop too short in its employment: there is indeed a line to be observed on all occasions between these two extremes, and that physician will be the most fortunate, who has the discernment and firmness to draw it with a correct and steady hand.

Some practitioners hesitate about bleeding in the very onset of acute visceral inflammations, deceiving themselves with the vain expectation, that such expedients as purging and blistering will finally succeed. And when an alarming increase of the symptoms has awakened them from their delusion, they begin to bleed again and again, till at last exhausted nature sinks as much from an excess of evacuations, as from the original disorder. The loss of many inestimable hours is not to be repaid by such indiscriminate rashness. If the inflammation has advanced far, the tone of the general system will be proportionally subdued, and the medical attendant ought then deliberately to pause as to the measure of depletion, for the life of the fellow creature committed to his trust may entirely depend upon its being exactly suited to all the delicate relations of the case. Under such circumstances, small general bleedings will at all times be preferable to large ones; and where any thing like a state of collapse is apprehended, local blood-letting and blisters should be substituted. Yet if there be one remedy more calculated than another to repair the ravages made by delay, it is the conjunction of calomel and opium, which will tend to arrest, if any thing can then arrest, the topical affection. This combination, however, requires to be given with great care at such a crisis. As much calomel ought to be exhibited as will render its speedy influence on the system probable, and as much opium as will restrain it from passing off by the bowels and calm the

general irritation. About a scruple of the former, with two grains of the latter may be first prescribed, and afterwards very small doses of both repeated every two or three hours. These medicines are not only useful in neglected and protracted inflammations, but also in those cases where depletion may have been carried too far in the first instance, or indeed at any time. They will sometimes bring the system back towards recovery, when it appeared to have lapsed beyond the reach of medical agency.

In those febrile disorders which arise from topical inflammations, there are three stages similar to those of typhus. The first is marked by a retrocession of blood from the surface, and a consequent congestion internally. This stage, however, is generally of very short duration, and is hardly ever in a ratio, even as to degree, with the consecutive one of excitement, in which the local pain, quick pulse, and increased heat, are the most conspicuous phenomena. In the acute forms of inflammation, the stage of excitement is generally of short duration, sometimes terminating in less than twenty-four hours, and seldom exceeding more than three days. Its natural tendency is to produce universal collapse and derangement of structure, which are the most essential parts of the third and last stage, in such affections. It must therefore, be evident, that in all acute inflammations of the viscera, the time is very limited in which decided depletion can either be useful or admissible. This,

however, is not the case with those visceral inflammations, which assume the sub-acute character; for in them, as has already been shewn in the inflammatory typhus, depletion may often be employed with advantage, several days after the commencement of the inflammation. The distinction, then, between the acute and sub-acute varieties of the inflammation, must be of great and practical importance; and it is much to be lamented, that it has been disregarded by systematic writers, whose descriptions and directions have great influence over the young and inexperienced members of the profession. But, in addition to what has been previously advanced, it is hoped that the following case and remarks will contribute to elucidate the pathology and cure of sub-acute inflammations of the viscera.

In December, 1814, a married lady, about thirty-seven years of age, had an attack of erysipelas on one leg, extending up to the thigh. It soon yielded to topical bleeding by leeches, to purgatives, and an antiphlogistic regimen, but she remained weak, and being pregnant, an abortion succeeded. Notwithstanding, the patient exerted herself in getting abroad in the following month, though the weather was often very cold. On the 5th of February, 1815, she complained in walking of an uneasy sensation in the left side of the abdomen, which she described as a sort of dragging pain. Next day this uneasiness extended to both sides, and also round to the back,

the urine being passed with considerable difficulty. The symptoms not abating, the family surgeon was consulted on the 7th, who apprehended that there was a tendency to inflammation, and therefore took away ten or twelve ounces of blood from the arm, which greatly relieved the pain in the back, though not the uneasiness of the sides. A calomel bolus was afterwards administered, followed by the sulphate of magnesia, which freely evacuated the bowels, and brought away some scybalæ. The last mentioned cathartic was repeated on the 8th, and an action still maintained on the bowels; but on account of a disposition to nausea, the effervescent draughts were substituted on the following day, and an opiate given at bed-time. The pulse, which had previously raged from 90 to 120 in the minute, rose on the morning of the 10th to 148, and, the attendant surgeon suspecting some latent mischief, I was for the first time requested to meet him in consultation on the case.

At this period, the fever was considerable, and though the uneasiness in the sides was not acute, yet it remained permanent, and was increased by pressure, motion of the body, or a full inspiration. Twenty-four leeches were applied over the integuments of the parts affected, and a brisk saline purgative exhibited. The patient felt somewhat better from this treatment, and the pulse fell to about 138 in the minute, and became rather softer. But, the pain of the sides continuing, twenty-two ounces of blood

were taken from a large orifice, in the morning of the 11th, under an impression that an abdominal inflammation still existed. The blood drawn was much cupped, and covered with a thick buffy coat. Two large blisters were afterwards applied to the sides, beneath the false ribs, and extending backwards towards the loins. The patient suffered greatly from the blisters, which were removed and dressed on the 12th, at noon, when the pulse was 120 in the minute. She was much distressed with flatulence and retching throughout this day, and had a laxative enema administered, which relieved the bowels. The internal uneasiness of the sides was rather diminished, not being troublesome when the body was perfectly quiescent, but still becoming so on pressure, motion, or deep inspiration. At bed-time, twelve grains of calomel with two of opium were given in the form of a bolus; the first effect of which was distressing, or, as it was termed by the patient, *overwhelming*, and a profuse perspiration occurred during the whole of the night. But, at an early hour of the 13th, the pulse was only 110 in the minute, and she felt tranquil and relieved, declaring that the last dose of medicine seemed to strike at the root of the disorder. The perspiration continued throughout the greater part of the day. With a view of exciting ptyalism, twelve grains of calomel and three of opium were prescribed in three pills, one of which was exhibited, at intervals of about six hours. She had some hours of sound sleep in the night of the 13th, and felt her-

self still easy the next morning, when the pulse was 120 in the minute, and ptyalism obviously existed. The succeeding night was more comfortably passed than any during her illness; and from this time the uneasiness entirely left her sides, so that she appeared quite convalescent by the 23rd of the month, though she was subject to spasms in her legs when she attempted to walk.

On the 25th, the patient had some return of pain in one side, which continued unabated the subsequent day, and was then attended with increased heat of the skin, and hard, quick pulse. We were decidedly of opinion, that it was advisable to bleed again, especially as the strength of the patient had been considerably recruited during her former convalescence. Accordingly about twenty-seven ounces of blood were drawn, the bowels freely evacuated, and another blister applied to the side affected. On the 27th, she considered herself much relieved, and indeed had felt little pain since the bleeding, except in respiring deeply, but she complained of being very weak. Laxatives and the antiphlogistic regimen were continued, and she improved in every respect, until the 1st of March, when the pain of the side again returned, with hot skin and frequent pulse. The warm bath was now tried, but without the least relief. The pain and fever continuing to increase, general venesection seemed once more indispensably necessary, and about twenty-six ounces of blood were

abstracted, before a sufficient impression could be made upon the pain and the pulse. Even during the operation, she found herself much relieved, and a warm perspiration broke out after it, which, being encouraged, continued many hours. Dreading lest these repeated attacks of inflammation should leave a tendency to organic disease, in the parts which had been affected, we considered it prudent again to prescribe calomel and opium; and ptyalism was a second time moderately established, by the 3rd of the month, from which time to the 9th, the pulse continued to fall, and the pain entirely subsided. There was, however, some threatening of uneasiness in the abdomen on the 10th, but it readily yielded to the operation of a brisk cathartic. From about the last mentioned period, laxatives and anodynes were alternately administered until the 25th, when the patient was so far recovered as to get into an adjoining room, and soon afterwards was able to ride out in a carriage. On the 21st of April, she was suddenly attacked with an acute pain in the chest, which extended to one of the shoulders, and was increased by a full inspiration. Yet this pain appeared to be entirely spasmodic, for it was greatly relieved by opiates, and soon afterwards wholly subsided, without leaving the least cough, or other symptom of pulmonary disorder. During the remainder of the year, this lady continued tolerably well, though she was not able to bear much exertion. When she had any sensation of returning

pain, which was occasionally the case, she generally had recourse to the compound rhubarb pills, and a moderate dose of the Black Drop,* by which she was almost always quite relieved. She also continued to wear a warm plaster on the right side, which

* The Black Drop was originally prepared, upwards of a hundred years ago, by Edward Tonstall, a medical practitioner of Bishop's Auckland, in the county of Durham, and one of the society of Friends. The recipe, passing into the possession of a near relative, John Walton of Shildon, who also prepared that medicine, was found amongst the papers of his brother, the late Edward Walton of Sunderland, and by the permission of my much respected friend Thomas Richardson,* senior, of Bishop's Wearmouth, one of his executors, it is here inserted.

"Take half a pound of opium sliced;—three pints of good verjuice;—one and a half ounce of nutmegs;—half an ounce of saffron. Boil them to a proper thickness, then add a quarter of a pound of sugar, and two spoonfuls of yeast. Set the whole in a warm place near the fire for six or eight weeks, then place it in the open air, until it become a syrup: lastly, decant, filter, and bottle it up, adding a little sugar to each bottle."

The above ingredients, agreeably to the experiment of a scientific friend, ought to yield, when properly made, about two pints of the strained liquor; one drop of which he calculated to be equal to three drops of the tincture of opium, prepared according to the London Pharmacopœia, and the effects of its exhibition also tended to shew, that this was perhaps as accurate an estimate as could be made. Probably this compound might be equally well prepared, by a simpler process; and perhaps some other vegetable acid and aromatic might answer as good a purpose as the verjuice and nutmeg. The Black Drop is a most excellent preparation of opium, and highly deserving of a place in our pharmacopœias. From the quantity of acid in its composition, it will often stay upon the stomach when other preparations will not, and, in the hands of a judicious physician, may therefore be usefully applied.

* This highly respectable member of the society of Friends died at an advanced age, since the first edition of this work was published. He possessed the mind of a philosopher, and the heart of a philanthropist.

seemed the most liable to the return of pain. For some time she was now and then subject to dyspepsia, from which, and an occasional sallowish tinge of the skin, there appeared to be a tendency to irregularity or obstruction of the biliary secretions. On this account, she was recommended to remove to Harrogate, where she drank the sulphureous water with very good effect, though this did not entirely remove the disposition to bilious attacks. By persevering, however, in a light diet, and occasional laxatives, she in a great degree regained her health, and has since continued pretty well.

This case has been selected for the elucidation of the sub-acute inflammations of the viscera, because it is one of the most interesting of the kind that I ever witnessed, and because the highly intelligent husband of the patient kept most accurate notes of its progress, from which the foregoing history has been extracted. It must have been perceived, that this lady had a peculiar tendency to inflammation. She was first attacked by an erysipelas, an affection which I have frequently seen followed by some inflammation of the internal parts. She had not recovered from the shock which this gave to her strength, when an abortion took place. The hemorrhage which accompanied this event, appears to have left the circulation in that vacillating, variable state, which not only always succeeds large losses of blood, but which powerfully predisposes to inflammation.

In this state she was frequently exposed to a cold and changeful atmosphere, which was the exciting cause of the first attack of abdominal inflammation. When the system is weakened from any cause, but especially from loss of blood, exposure to cold readily occasions congestions about the viscera, which in their turn bring on local inflammation and general reaction of the heart and arteries. In the case under consideration, the inflammation was at first perhaps seated in the kidneys, and probably afterwards extended itself to the liver. For more than two days it was marked by little else than uneasiness or pain; but, as the nerves are in some degree the sentinels of life, that warn us of existing or approaching danger, whenever pain or uneasiness continues permanent, even for a few hours, some latent mischief may always be confidently apprehended. When the family surgeon was consulted, with great propriety he had recourse to immediate venesection, and without delay freely evacuated the bowels. This treatment gave some immediate relief; but, in defiance of a brisk purgative, which was afterwards exhibited, the disease advanced insidiously; and in four days more, the pulse rose to 148 in the minute, though the pain was not then very urgent. The local bleeding and purgatives recommended at my instance did not afford much relief, and there seemed then a necessity for the most decisive measures, to save the life of the patient. One full bleeding from the arm, followed up by blisters, calomel, and opium, produced

the most signal benefit; and it is worthy of particular attention, that the lady herself considered the ultimate effect of the large dose of calomel and opium peculiarly serviceable. These measures, together with the ptyalism afterwards excited, restored her to a state of convalescence. The comparatively slow progress of the sub-acute inflammation is well revealed in this attack, for had it been of the acute form, the second bleeding would have been inadmissible, instead of beneficial; nay, in all probability, the case would have been fatal before the sixth day, on which it was employed. It deserves, however, to be pointedly stated, especially as the fact has been omitted in the previous detail, that this lady had a degree of uneasiness in the left side, so early as the 3rd of February, two days before she felt that dragging sort of pain, which appeared to mark the developement of the sub-acute inflammation. In this instance, therefore, the disease had fully existed three days at least before medical assistance was obtained, a loss of time which is always greatly to be lamented on such occasions; for when a morbid action has been so completely established, it can seldom be at once subdued, and often renders the case more protracted, if not more dangerous than it otherwise would have been.

The second attack of inflammation occurred twenty days after the first, and as it seemed to arise from too stimulating a diet, I had to regret not having

sufficiently warned the patient against committing so perilous a mistake. In all inflammations of the viscera, but particularly in those of the sub-acute kind, the diet should be of the most cooling description, long after convalescence has been established : otherwise the topical affection will most probably be reproduced, as actually happened in the case before us. This second attack was more obstinate than the first, and of course required more copious depletion for its removal. From the 7th of February to the 1st of March, the patient lost, by general and local bleeding, upwards of ninety ounces of blood, by far the largest quantity which I ever knew drawn in any case of sub-acute inflammation. This lady considered, that venesection and opium were the means, under Providence, to which she principally owed her recovery; and was most sensible of the benefit of the last bleeding. From the long continuance of a quick pulse, and occasional returns of uneasiness in the side, it appeared suspicious whether there was not a threatening of slow organic disease, which is far more liable to follow the sub-acute than the acute form of inflammation. It was partly with a view of guarding against such an occurrence, that ptyalism was induced the second time, mercury being one of the best preventives of structural derangements. In almost all the slight returns of pain which this lady experienced during her final convalescence, she found the most decided benefit from opium, which perhaps has greater powers in preventing inflamma-

tion, than has hitherto been acknowledged. There are many inflammatory affections occasioned by the continued irritation of pain, which might often be prevented by an early and judicious administration of opium. Surgeons seem to know the use of this medicine much better than physicians; for by freely using it after operations causing excessive pain, they often succeed in warding off serious inflammations.

Acute visceral inflammations sometimes arise from organic diseases; and when this combination occurs, it may often be discovered by tracing the history of the case back for some time, and carefully comparing the past symptoms with the present appearances. The acute attack will generally be preceded by loss of flesh, and some internal uneasiness. But the following examples of this kind may not be wholly useless to young practitioners.

An elderly and married lady had been afflicted several years with what were deemed nervous complaints. She was extremely liable to dyspepsia, was frequently attacked with violent spasms of the bowels, and gradually lost her appetite, flesh, and spirits. When she came under my care, she was considerably emaciated, and had that sallow, faded hue of the face and skin, which is so characteristic of organic affections. She complained of a constant uneasiness in the abdomen, and had occasionally violent pains there for a few minutes. Her pulse was rather quick,

her tongue white, and her skin somewhat above the natural temperature. As the bowels were reported to be in a constipated state, I ordered a mild purgative, which however failed to operate, and not only greatly increased the spasms of the intestines, but brought on a distressing sickness. The irritation having been allayed by opiates, another purgative was ventured upon, but it produced the same effects as before; and the lady began to complain of a violent, *bearing-down* pain near the navel, as if, she said, there was some resistance in that part to the passage of the feces. Opiates again allayed the distressing symptoms, and on the following day some liquid stool was passed, in which there were small portions of extremely flattened scybalæ, as if they had been forced through a very contracted aperture. These appearances of the feces, together with the rest of the symptoms, led me to conclude, that there really was a stricture in some part of the intestines. From this time I determined to pursue the palliative plan. But in a short period the patient became considerably worse, and at length had a most decided attack of enteritis. The only chance of protracting life seemed now to be in moderate, but decided depletion. The patient was therefore bled from the arm till faintness supervened; and this expedient afforded great and immediate relief. The blood drawn was extremely cupped, and covered with the inflammatory crust. Although the bleeding reduced the violence of the inflammation, yet it was obvious from

the soreness of the integuments of the belly, the quick pulse, hot skin, and irritable state of the stomach, that some degree of increased action still existed in the bowels. On this account several leeches were put over the surface of the abdomen, and a blister afterwards applied. It was in vain to exhibit other powerful auxiliaries, since nothing but opiates would remain upon the stomach. For some days, however, there seemed a suspension of the inflammation, yet a general collapse gradually came on, under which she at last tranquilly expired. On examining the abdomen after death, the peritonæum and the large as well as small intestines were found considerably inflamed, and thickened in some places. Not far distant from the caput coli, a large tumour was discovered attached to the villous coat, which as nearly as possible blocked up the canal. Both above and below it, the gut was much contracted, and somewhat firmer than natural. This tumour had doubtless been the gradual growth of many years, and, by impeding the descent of the feces, had occasioned all the pain which the patient endured, and finally induced the inflammation which proved mortal. Yet all cases of visceral inflammation, combined with organic disease, are not necessarily fatal, as the annexed will clearly demonstrate.

A married woman, advanced beyond her fortieth year, had been a long time under my care, for chronic enlargement of the liver, and apparently of the

right ovarium. At one time, there was an indistinct fluctuation in the abdomen, with other dropsical symptoms; but a regular course of calomel and squill not only removed these, but improved the general health of the patient, though it did not remove the enlargement of the parts specified. She was attacked with a cutaneous eruption resembling the nettle-rash, but, except from the troublesome itching which it caused, she conceived that it was very serviceable to her, having had less internal uneasiness since its appearance. The rash receded on exposure to cold, and soon afterwards she was afflicted with pain in the abdominal tumours, which in about two days became extremely severe, and was attended with universal soreness of the belly, and a high fever. The abdominal inflammation now being the most pressing and dangerous symptom, she was bled till she fainted, the bowels were repeatedly opened by full doses of calomel and jalap, and a large blister applied over the abdomen. These means were very useful, yet as some signs of inflammation still existed, calomel and opium were freely administered until the mouth became affected, and from that period she recovered rapidly. This patient had a second and similar attack, which was removed by the same means; but during its continuance, she passed an extraordinary quantity of morbid bile, and was persuaded, that *something*, as she termed it, had burst within her liver, as the tumour in the side from that time was considerably diminished. Since the last illness, she certainly had better health

than for some years before, although the evidences of the organic affections were still apparent. The rash returned after each of those attacks; and it has doubtless contributed to arrest the progress of those internal derangements, which will, most probably, at some future period prove fatal to her. Yet, notwithstanding the inflammation was twice arrested in this case, wherever there is reason to suspect that visceral inflammation is complicated with organic disease, the prognosis should always be most guardedly given; because, in general, patients either immediately sink under the acute disorder, or soon afterwards fall victims to the chronic one. Nothing marks organic disease so well as a continued and progressive course, with loss of flesh and colour, and some quickness of pulse. Whenever patients do not recover as usual after attacks of acute inflammation of the viscera, the most minute investigations ought to be made lest a chronic should have insidiously supervened the acute inflammation; and as such an occurrence may be frequently traced to the too early use of generous drinks or diets, or to an exposure to a cold and variable atmosphere while yet in a state of weakness, so these should be studiously avoided by patients convalescent from acute inflammations of the viscera.

DYSENTERY.

The cases of dysentery which I have seen mostly originated from the influence of the weather acting on the skin and thence on the abdominal organs, but I have never known any of them to propagate themselves by an inherent principle of contagion, like the genuine typhus. Yet dysentery has so many points of agreement with the inflammatory form of typhus, that it may not be irrelevant concisely to consider its pathology and treatment in this department of the work; for notwithstanding, under its mildest aspect, it has a resemblance and relation to diarrhœa where no positive inflammation exists, nevertheless in all its more distinct and unequivocal forms, it is connected with inflammation or congestion. In the consideration of dysentery, as of every other febrile disease, the progress and tendency of the symptoms should be most assiduously noted at short intervals; because even when there are no indications of inflammation in the beginning, it may become rapidly or gradually developed during the advancement of the excitement.

The inflammation which is so liable to accompany dysentery is either of the sub-acute or of the acute kind as in typhus, and agreeably to my researches it is seated, for the most part, chiefly in the villous coat of the intestines and in the liver. Dysentery generally runs a mortal course, if left to itself, within ten

days, when the concomitant inflammation is of the acute kind, but when of the sub-acute kind it is considerably more protracted, and often assumes a chronic character, with signs of ulceration in the intestines. Though the sub-acute kind of inflammation commonly appears soon after the occurrence of the general excitement, yet it sometimes arises, at a late period, out of the mildest forms, a circumstance which does not so often obtain with the acute kind, as it most frequently occurs where the symptoms are strongly marked from the commencement. Yet in forms of dysentery apparently the mildest at their onset, an insidious inflammation may begin and proceed, especially in the villous coat of the bowels, with little or no *permanent* uneasiness; and therefore the greatest attention is requisite to unmask such secret attacks, and to prevent them from undermining the vital works within. If there be, in any case of dysentery, a great desire for cold drinks, attended with a sense of heat in the belly, nausea, flatulence, short breathing, and quick pulse, inflammation may be confidently suspected, even though all the other pathognomonic symptoms of abdominal inflammation should be absent.

When a marked stage of oppression, with a cool or cold skin, ushers in dysentery, an acute or sub-acute inflammation of some abdominal viscus will mostly be developed by the general excitement which follows that stage; and in fact the degree of the in-

flammation then developed seems to be proportionate to the degree of the general excitement, inasmuch as if the latter run high, the inflammation will be acute, and if it be more moderate, the inflammation will be sub-acute. This pathological view makes the concomitant inflammation rather a symptom or an effect of the general excitement, than the original cause of the dysentery, and a strict survey of facts will verify this opinion: for in the first stage of oppression when the surface is cool, so far from there ever being any unquestionable sign of inflammation, a diminution of arterial tone exists every where; and the substantial evidences of inflammation only emerge with the excitement of the heart and arteries, which succeeds the first stage of oppression. If it should be asked why in dysentery the force of the general excitement should be spent or concentrated upon some of the abdominal organs, it may be answered because those organs were more predisposed to disease than others before the attack. Indeed in many cases this predisposition can be satisfactorily ascertained, from the influence of damp ground, of bad water, and of unwholesome food; so that the abdominal organs having been once rendered susceptible, when any general shock occurs the principal effects of that shock will be seated in the weakest parts. If any topical affections should exist in the first obscure stage of dysentery, they are denoted by a deficiency of heat, and by an oppressed state of the heart and arteries; and therefore they cannot be

fairly called inflammatory, for they are strictly venous congestions, and are removed by that increased action of the heart which generally follows them, and which produces both the constitutional fever and the topical inflammations.

In every instance, I believe, the functions of the skin are primarily affected in dysentery, and continue disordered during the whole course of the disease; and indeed it will be found no unimportant part of the cure to restore them to a natural condition. All the cases of dysentery which I have attended, originated from the influence of cold, under whatever form applied to the body. The first effect of this influence was an abstraction of caloric from the skin, and a consequent recoil of blood from the superficial vessels: an accumulation of blood succeeded in the internal veins, by which the heart was finally roused into a preternatural action; and in this manner the train of morbid phenomena generally proceeded, until the disease was completely established, or until the indications of an acute or of a sub-acute inflammation became apparent.

If to the symptoms, already enumerated in the abdominal inflammations of typhus, be superadded the frequent slimy, bloody discharges by stool, the griping, and the tenesmus, we may have a tolerably correct notion of the severer forms of dysentery; except that as the villous coat of the intestines and the liver

are the parts most liable to be inflamed, we must never fail to look to them for some of the chief peculiarities in the characters of this disease, when it has once been fully developed. And as inflammation both of the liver and of the villous coat of the intestines may be most obscure in their onset and advancement, so practitioners should always be upon the watch in every case of dysentery; because with whatever appearances of debility this affection may be accompanied, dissection will always shew, that abdominal inflammation or congestion was directly or indirectly the cause of death. It occasionally happens in dysentery, as in typhus, that death takes place before the excitement has had time to emerge; and in such cases, considerable congestions are found after death about the internal organs, but particularly in the veins of the liver. Again, in other cases of dysentery, the fever puts on a distinctly remittent type, or it has a resemblance to the irregular forms of the congestive typhus; and in both examples of this description, an accurate inquiry will detect some degree of venous congestion about the liver or spleen, with a variable state of the surface. The more the pathology of febrile diseases is investigated, the more plainly will it appear, that the leading effects on the great viscera are few and uniform, how various soever may be the external phenomena and the primary causes; and in conducting the treatment, these effects must always be strictly regarded from the first to the last, otherwise we shall be left

without any fixed principles to guide us to successful results of practice.

There can be no doubt that dysentery may be cured by very different methods—by bleeding and purging, by mercurials and opium, or simply by a conjunction of cathartics with sudorifics; and the reason of this will, in some measure, be manifest from what has just been said, since the disease has a variety of character which admits of a variety of treatment. But amidst the numerous plans which have been recommended, it is desirable to know those upon which most confidence may be placed, not only in the mild but likewise in the severe modifications of dysentery. The slightest attacks of dysentery have a close affinity to an ordinary diarrhœa, and as they may become aggravated to a dangerous degree from neglect or delay, they ought always to be attended to at the very beginning. Even in such attacks, there are three parts which claim an especial consideration, the villous coat of the intestines, the liver, and the skin; for no case of dysentery can exist, however simple, in which the functions of these parts do not in some way participate. A few doses of calomel and castor oil will generally restore both the villous coat of the intestines and the liver to a natural condition; but the warm bath, and the occasional exhibition of the compound powder of ipecacuan will greatly expedite the cure, by allaying irritation and determining the blood

to the surface. In the commencement of all febrile diseases when the skin is cool or of an irregular heat, the warm bath has generally an excellent effect in contributing to equalize the circulation; and this simple expedient, together with the employment of purgatives and sudorifics will often at once arrest the symptoms, or at least, by diminishing the venous congestions which then exist, will make the subsequent stage of excitement much milder than it would otherwise have been. Men who have practised in the navy and army must be fully aware of the great advantages which result from having patients immediately under command at the first attack of febrile diseases; and it is truly surprising to find how readily such diseases in general yield, at that early period, to the application of those measures which lessen internal accumulations of blood. In every instance of dysentery where appearances indicate venous congestions in the first stage, the lancet should usually be recurred to without hesitation, immediately after the employment of the warm bath; for if those venous congestions should not be speedily removed, they will give rise to an impetuous excitement, or endanger the structure of the part principally affected. But in most examples of this nature, where venesection is early required, a dose of calomel and opium ought to be administered after the operation: and if tepid diluents be given at the same time, this dose will commonly excite an universal perspiration, the effect of which is often strikingly

efficacious; so that little more is sometimes necessary afterwards, than to keep the bowels soluble by moderate doses of calomel and castor oil.

When fully developed with fever, dysentery is attended, under all its severer forms, with an acute, or a sub-acute inflammation of the villous coat of the intestines, and generally with an inflammatory or engorged state of the liver. If the inflammation of the villous coat of the intestines be of the sub-acute kind, and the affection of the liver similar, daily purging by calomel and castor oil, with occasional anodynes and the warm bath, may certainly accomplish the cure in many cases, provided these remedies be opportunely adopted. Yet even in such instances, it is invariably much better to bleed moderately at the beginning, and, the bowels having been freely evacuated, to produce ptyalism as rapidly as possible by the bold administration of calomel, with small portions of opium. It may be said, that there are records to shew that dysentery has often been cured without venesection, and the assertion cannot be denied; but this only proves, that diseases may be arrested by different measures, and the grand question is, what measures are most safe and efficacious in the general run of practice. If my observation be correct, early and sometimes repeated venesection at once diminishes the force of the abdominal affections, renders the system much more susceptible of the action of purgatives and mercury,

and not only shortens the duration of the disease, but lessens greatly the chances of chronic affections supervening the primary disorders in the abdomen. This even obtains in dysentery combined with the lowest degrees of inflammation: and those forms combined with an acute inflammation, absolutely require decided blood-letting from the first attack; as they are generally so rapid in their progress, that there is no remedy, with which we are at present acquainted, can operate so speedily as venesection in checking the inflammatory action. Whenever there is much irritability of the stomach in dysentery, it is a certain sign, that some of the abdominal organs are overloaded with blood, and venesection is then particularly indicated; indeed in every case of a threatening aspect, an impression must be made by the lancet soon after the attack, otherwise they will most frequently prove fatal in a short time, or finally assume a chronic character.

Bleeding was used in dysentery by Alexander of Thralles, whose opinions and practices in many respects resemble those of the present times; since he not only bled in many ardent fevers, but was a great advocate for purgative medicines, the efficacy of which is now so well established. Sir John Pringle frequently employed blood-letting in the dysenteries which appeared in the armies to which he was attached; and since the publication of the first edition of this work, Dr. Somers has shewn the utility of

this practice, from an extensive observation among the armies which served in the peninsular war. This practice, however, is not yet so highly valued as it ought to be in dysentery, by practitioners in general; and it will be most gratifying to me, if these desultory remarks in its favor should tend to make it more frequently adopted. Only let bleeding be once fairly introduced, in the beginning of the severer modifications of dysentery, and there will be fewer fatal as well as chronic cases; for many violent cases of dysentery are fatal for want of some measure capable of making a great and an immediate impression, and others become protracted from the morbid actions having been lessened, instead of completely removed, in the first instance. But before quitting the subject of general venesection, I must caution the practitioner to be prompt and decisive in its use at the onset, and most circumspect when the disease has continued for some time. In the beginning of urgent instances of dysentery the strength of the system is overpowered, not really exhausted; and one or two bleedings, carried so far as unequivocally to make the pulse a mere flutter beneath the finger, will generally be very beneficial. It is still a common practice to bleed repeatedly in inflammatory diseases, day after day; but so far as I have remarked, the second bleeding should promptly follow the first, where the first has not given the intended relief. And if this method be pursued, with the means hereafter to be mentioned, repeated blood-lettings will

seldom be necessary, even in the early stages of dysentery, and of similar affections. As for the protracted cases of dysentery, the bleedings must always be small, whenever they are deemed requisite at that period; for the continued irritation of the disease has then so reduced the strength as to render all powerful applications doubtful and even dangerous.

It is perhaps one of the most remarkable defects in the practice of most men who have distinguished themselves in physic, that they rely far too much upon one remedy, or upon one plan of treatment. By limiting ourselves to one remedy, or to one plan of treatment, we are in great danger of leaving unemployed agents which are really serviceable; and as we ought to be careful not to confine our pathology within some narrow and favorite limit, so we ought also to endeavour to make our therapeutics comprehend, not one measure only, but those measures, the conjoint operation of which is more salutary, than the operation of any of them singly used. It were easy to shew from the history of medicine, that too much reliance has frequently been placed on blood-letting, to the exclusion of other expedients of great power: and even if the illustrious Sydenham, next to Hippocrates as a practical observer, had employed purgatives more freely with the lancet, there cannot be a doubt, that the results of his experience would have been far more favorable; but as in deviating from the prejudices of his own times, he had

to create a practice for himself, it is pleasing to reflect how much his genius anticipated of a future and better age. Though general bleeding, in my opinion, is incomparably the best first remedy in the more violent forms of dysentery, yet there are other auxiliaries which should always be brought promptly into action, but particularly purgatives, with calomel and opium.

The most intense attacks of dysentery may be cured by the decisive employment of bleeding and purging at the beginning; and the same might be asserted of the bold administration of calomel, combined with opium and sudorifics. But in estimating the powers of any one mode of treatment we should endeavour to trace it through its general consequences, before we venture to give a final opinion; and if we find that there are some instances in which it fails, and that others of a precisely similar character prove remediable by the combination of another mode, we surely ought not to hesitate in making the addition in our future experience. Now though bleeding and purging alone may cure dysentery, and though calomel and opium may have the same effect, yet a conjunction of these measures will be more efficacious in the main, than either administered alone; and as we judge in medicine of the expediency of any thing from its general rather than from its particular effects, so we have the strongest grounds for preferring the united agency of these means to

their separate agency. As soon, therefore, as a sufficient quantity of blood has been drawn, a scruple of calomel ought to be given, with one or two grains of opium. This combination not only tends to take off general and local irritation but also to act upon the skin, and to facilitate the operation of aperients, as has been already explained in speaking of certain modifications of the inflammatory typhus. About two or three hours after the exhibition of the calomel and opium small doses of the sulphate of magnesia should be repeatedly prescribed until copious stools be procured; and where the stomach continues irritable a little calcined magnesia may be added to each dose of the sulphate, a compound which often remains better upon the stomach than any other. The bowels having been thoroughly evacuated, calomel should be boldly administered, with small doses of opium or of the compound powder of ipecacuan, and continued afterwards at proper intervals, that its specific effects may be established as speedily as possible in urgent examples; and where the belly is not regularly moved under the use of the calomel, either the sulphate of magnesia or castor oil may be given as occasion may require, since these are unquestionably the best purgatives in dysentery. When the mouth is once obviously affected by the calomel, prudence requires, that it should be withdrawn, or only prescribed in small quantities: but until recovery be completely insured, an action must be daily maintained upon the bowels:

and yet this action must be moderate when the violence of the symptoms is past, and ought never to be continued when the stools have become perfectly natural. By purgatives having been pushed too far in the advanced stages of dysentery, I have seen some patients apparently lost; and practitioners, therefore, should make a point not only of examining the stools daily, but of proportioning the evacuations to the powers of their patients. This is especially requisite in the present times, when the use of purgative medicines is in full force; for however excellent they may be in the outset and advancement of acute diseases, much caution is required in their exhibition when those diseases have begun to decline.

The medical public, I conceive, is greatly indebted to Dr. James Johnson,* an accurate observer of nature, for having so clearly illustrated the connection between dysentery and the deranged functions of the liver and of the skin; and also for having demonstrated the great efficacy of scruple doses of calomel, combined with small portions of opium. The proper combination of these two medicines has a surprising effect in restoring the natural balances of the circulation, and in promoting a free secretion of bile and of perspiration. When it fails, however, in acting forcibly on the skin in dysentery, which will

* The author of the highly valuable work on the Influence of Tropical Climates. London: Printed for J. J. Stockdale, 1813.

rarely be the case, small doses of pulvis antimonialis and camphor, or of ipecacuan, may often be added with considerable advantage; but the warm bath should be occasionally used at the same time more effectually to equalize the vascular system, and to induce a flow of blood to the skin. Even a flannel bandage applied over the abdomen will not unfrequently give some relief to the tormina and tenesmus, on this principle; and we cannot be surprised at the effect when we see slight inflammatory affections of the fauces alleviated by wrapping a little flannel round the throat. Since the publication of the first edition of these illustrations, a protracted case of dysentery came under my care, in which the patient was exceedingly exhausted, and almost constantly harassed by small ineffectual discharges of blood and slime, attended with considerable tormina. The tongue was foul, the stomach flatulent and irritable, the pulse very small and quick, the patient lay upon her back with her feet drawn upwards, and she had a very troublesome hiccup. There was considerable tenderness over the region of the liver, but she could bear pressure without much uneasiness over the lower part of the belly, which seemed to be sunk or drawn inwards, as is sometimes very observable in bad cases of dysentery. Besides this unfavorable conjunction of symptoms, the stools were occasionally of a very black colour, which is always an untoward circumstance in cases of dysenteric diseases. As general blood-letting appeared entirely inadmis-

sible in the case, and as symptoms of inflammation still existed in the liver, I ordered six leeches to be applied over the integuments of the right hypochondrium; and without further delay prescribed fifteen grains of calomel with two grains of opium, and directed that a similar dose of the calomel, with one grain of opium, should be repeated in twelve hours. This treatment lessened the tormina, tenesmus, and hiccup the first day, but the large doses of calomel, with the small proportions of opium, were regularly continued night and morning for four days longer, when a slight ptyalism occurred; and as from this period the case assumed a favorable aspect, nothing more was directed than a small blister to the right side, occasional doses of castor oil, and a flannel roller round the abdomen.

It was observed in the first impression of these pages, that local bleeding, as well as blistering, had invariably a double influence, a topical and a general one, by the first of which a change is induced on the part, and by the second on the whole vascular system. Since that time I have satisfactorily ascertained, by numerous trials, that small portions of blood, taken away by leeches from the capillary vessels, have a considerable effect in diminishing the action of the heart: and whenever, therefore, inflammation exists in conjunction with much debility, this method of drawing should be adopted by way of arresting the inflammation, and saving the strength at the same

time; but whenever leeches are employed in urgent and doubtful cases of this nature, a sufficient number ought to be applied, until there be an obvious diminution of the pulse. It is very common for persons to complain of being faint after the application of leeches, even when only a few ounces of blood have been drawn by them; and the action of the heart may be weakened or stopped by a small or moderate quantity of blood thus taken away from the capillaries, when considerably more would be required to produce the same effect, if abstracted from a large vessel. This fact admits of an extensive application in the practice of physic, but it is peculiarly appropriate to those inflammatory cases which have been so protracted as to induce debility. Nevertheless it must not be forgotten, that in the beginning of all inflammatory diseases, the lancet ought not to be superseded by local bleeding, though the latter may be employed as one of the best auxiliaries. In some instances of dysentery, I have ordered several leeches to be put to the integuments of the abdomen, and the result was always satisfactory, when this was timely done, and along with the means before mentioned; but though such a treatment may sometimes tend to arrest or to alleviate the symptoms at an advanced stage, yet calomel and opium must then be relied on more than any other remedies. As for blisters, they may be said literally to burn the part to which they are applied, for they appear to operate by accumulating or disengaging caloric; and the

discharge of serum which at last takes place is a species of evacuation which may affect the local and the general circulation, though their chief efficacy is perhaps attributable to the principle of counter-irritation. In the earlier stages of dysentery, blisters are sometimes very advantageous, particularly when put to the region of the liver, after the use of depletion: but where the stools are extremely frequent, blisters create an external inflammation which often proves extremely troublesome to patients; and whenever deemed necessary in the advanced stages, they ought not to be made large, as they might in that case give rise to a hazardous irritation and exhaustion.

The insufficiency and danger of half-measures could hardly be more strikingly exemplified, than by pointing out their effects in severe cases of dysentery; for, in the first place, many patients would fall victims to the unresisted rapidity of the disease, and in the second, in many it would assume a chronic character, where its violence had been somewhat moderated. In chronic cases of dysentery, complicated with affections of the liver, and with ulceration of the intestines, I have found nothing so useful as small doses of calomel and opium, or the blue pill with a little opium, and a regular perseverance in the Harrogate sulphureous water so as to keep the bowels soluble by it; but the mercurial preparations should be continued until the mouth be made gently sore, and it ought to be kept in that state for some time,

while the patient breathes a fresh atmosphere, and adopts a cool nutritious diet by way of renovating the general system. When dysentery is complicated with ague, or when it has arisen from marsh effluvia, a change of air often answers the best purpose: but in most cases it will be found impossible to cure the ague, until the dysentery be removed; and in this, as in every other case of mixed disease, the best general rule manifestly is, to attempt to subdue the most dangerous symptoms first. As I have spoken only of dysentery as it has been presented to me in Great Britain, those who wish to be correctly informed of its nature as modified by a tropical climate, will find some excellent remarks in the writings of Dr. James Johnson; and in confirmation of the efficacy of early venesection no modern work can be consulted with more advantage than that of Dr. Somers, to which an allusion was formerly made. This much having been premised in regard to inflammatory affections of the internal organs, it may not be improper to throw out some hints respecting those which are obviously connected with the surface of the body.

ERYSIPELAS.

Though erysipelas is sometimes accompanied with a fever strongly resembling typhus, yet having never known it to spread by infection, whether under a sporadic or an epidemic form, I am induced to believe, that it is hardly ever combined with the real,

contagious typhus. The pathology of acute fevers may be divided into external and internal; and however they may disagree in their external, they generally have a close affinity in their internal pathology. The true erysipelas may be distinguished at a glance from typhus, by the red and diffused affection of the skin; yet in both these diseases the viscera and their investments are liable to similar derangements, and consequently, the symptoms of both to similar variations. Erysipelas resembles typhus thus far, that it is either simple or complicated,—simple when the cutaneous redness and the fever are not connected with an internal inflammation,—and complicated when they are actually co-existent with an internal inflammation. In the simple erysipelas, however, what are called increased determinations of blood frequently take place to different organs, or rather there is an obstruction or distention in the vessels of those organs which does not usually amount to positive inflammation at any time, but which may pass into inflammation from the continuance of the general excitement. In a word, the simple may be converted into the complicated erysipelas, from the increased action of the heart and arteries operating on topical predispositions which had before existed in a latent state; and the more the subject is examined the more certainly will it appear, that most visceral inflammations are the mere effects of general excitement, the force of which is only so decidedly directed to particular parts, because those parts had

been previously weak, or otherwise morbidly disposed. The secretions of the liver are especially liable to be disordered even in the simple erysipelas, and with them the functions of the whole surface sympathize: indeed a large majority of erysipelatous attacks may be traced to the influence of the atmosphere, or to other causes which operate on the skin and liver, between which so remarkable a consent exists; and in those persons who are most liable to erysipelas it will generally be found, that they are subject to bilious disorders, and to irregular conditions of the skin as to temperature and perspiration. When inflammation of any of the vital organs does arise out of the simple erysipelas, it is in general the gradual product of a moderate excitement, and assumes the sub-acute character; whereas in the more strictly complicated erysipelas, the visceral inflammation rapidly supervenes an impetuous excitement, and assumes the acute character, the affection of the cuticle being then commonly the secondary disorder.

When an erysipelas follows blows or injuries of any kind of the head, more than ordinary care is necessary, for the brain and liver are apt to be inflamed; and I have seen some cases of this nature where the inflammation stole on in the most insidious manner, and at last proved fatal, under the mask of the external affection. In all the dissections which I have made in fatal instances of erysipelas, the brain, or its meninges, the liver, or the intestines had

visibly been the seats of that internal inflammation, which is generally the cause of death in this disease. The symptoms, therefore, already enumerated in the inflammatory typhus will enable the practitioner to detect the modifications of the complicated forms; and from what has just been advanced it will hardly be necessary to remind him, that he ought never to allow the mere cutaneous disorder to withdraw his attention from what may be going on in the vital regions of the interior. In private practice, but particularly in hospitals, it is still not uncommon to treat the erysipelas phlegmonoides of nosologists, to which the remarks in these pages entirely relate, as if it were a disease of real debility; and therefore it may not be amiss to attempt to shew, that early and active depletion is decidedly the best mode of treatment.

If the simple erysipelas be early attacked by proper measures, it will hardly ever become complicated; and so far as I have observed, it may commonly be removed within the first nine or ten days, provided the remedies be applied from an early period; but when the remedies are not thus early applied, it will often continue much longer, though it may generally be conducted to a favorable issue, by carefully watching over the viscera. At the commencement, one decisive bleeding from the arm should be employed, and immediately afterwards several leeches applied over the external seat of the affection: an antimonial emetic should then be administered,—the bow-

els freely evacuated by calomel, jalap, and neutral salts,—and a blister afterwards placed either between the shoulders, or over the region of the stomach. These measures, executed in rapid succession at the beginning, will often entirely subdue the disease in a short time, or at least render it so manageable, that it will yield in a few days to a regular perseverance in purgatives and an antiphlogistic regimen. When the abdominal secretions are much disordered, tolerably full, and even repeated, doses of calomel will generally be needful, in combination with small ones of antimony; for by the conjoint use of these preparations, an aperient, sudorific, and nauseating effect may usually be produced, which most frequently tends to restore the patient rapidly to health again. The only topical remedies to which I am partial, for an erysipelatous inflammation, are leeches, and cold saturnine lotions; but the former are infinitely preferable, and indeed in my practice they have proved exceedingly useful, when early applied, which is more than I can say of the saturnine lotions. Some time ago, I saw an erysipelas of the face apparently repelled by a stream of cool air, which played upon it from a broken pane in the room where the patient lay; and signs of coma soon afterwards appearing, death speedily took place with all the common indications of apoplexy, but an examination could not be obtained to ascertain the precise state of the brain. The result of this case certainly seems to bear strongly against the application of cold in one form of

erysipelas: but as it is unfair to draw a general conclusion from a particular instance only, I merely wish this to stand as a fact fitted to attract notice; and at the same time it is only proper to remark, that I have never known an erysipelas to be repelled by cold saturnine lotions, though I have seen them very often used. We have been in general dissuaded from the employment of leeches in erysipelas, from their bites having been said to induce gangrene; but from ample experience I dare venture to assert, that this is an occurrence which need never be dreaded in the erysipelas phlegmonoides, when the leeches are early applied; and in fact they may be safely and beneficially repeated two or three times in the course of the disease, though they should not be recommended in the advanced stages, as their punctures might possibly then become gangrenous.

The bold yet limited adoption of the antiphlogistic treatment will in general not only prevent gangrene on the surface, but those effusions and suppurations, which sometimes produce so much mischief, when erysipelas is seated in the extremities. Dr. A. C. Hutchinson has published a most valuable paper, in the Medico-Chirurgical Transactions, in which he recommends the treatment of erysipelas by incision. His plan is, to make several free incisions with a scalpel, on the inflamed surface, in a longitudinal direction, through the integuments and down to the muscles, as early in the disease as possible, and

before any secretions have taken place. These incisions, the author says, may be about an inch and a half in length, two or three inches apart, and vary in number from six to eighteen, according to the extent of the surface the disease is found to occupy.* This method was extensively and successfully pursued both by Dr. Hutchinson and several naval surgeons, in that species of erysipelas phlegmonoides, which is so liable to attack the extremities of sailors. From its proved efficacy, and the highly respectable authority whence it proceeds, it is certainly deserving of a more extensive trial in private practice, than it has hitherto received. But those who wish to pursue it, should peruse the precise and perspicuous tract, from which the above information has been briefly cited. It is remarkable what coincidences of opinion and practice may sometimes be found among those who follow the same pursuits, and that too from the independent research of the individuals who so strikingly agree. Though Dr. Hutchinson was not aware of the fact, yet so far back as the time of Dr. Friend, a practice similar to the above prevailed; for the latter observes, in his History of Physic, that in an erysipelas, *scarifying* upon the part, when the membranes are loaded and thickened, will often remove the inflammation in a very sudden and surprising manner.†

* See Medico-Chirurgical Transactions, published by the Medical and Chirurgical Society of London. Vol. V. p. 282.

† See Vol. I. p. 76, of the History of Physic. By J. Friend, M. D. The fourth edition. London: printed for M. Cowper, 1750.

When erysipelas is complicated, the brain and the liver are most frequently involved in the inflammatory action. Under this more serious form of the disease the most vigorous treatment is imperiously demanded;—the early, decided, and sometimes repeated, use of the lancet, with free local blood-letting by leeches, promptly succeeded by active purges of calomel, jalap, and the antimonial powder. These steps having been taken, a large blister should be applied as near to the region of the internal disorder as the erysipelas will permit, and the system rapidly saturated with mercury, in the manner formerly advised in the inflammatory typhus. If the brain should be inflamed, and the erysipelatous affection should be so extremely diffused over the face, neck, and shoulders, as to make the propriety of a blister between the scapulæ more than questionable, it may be applied near the site of the stomach, where it will have a considerable influence over the brain, on account of the sympathy which exists betwixt these two organs. This is no speculative opinion, for in many diseases of the head, I have seen the most unequivocal benefit from blistering the region of the stomach.

In the complicated erysipelas, the depression of strength is greater from the first than in the simple variety, and the pulse often feels weaker; because the vital functions are more impeded by the additional oppression of the internal inflammation. Nothing,

therefore, can be more fallacious than to suppose, in the beginning of such cases, that the apparent depression of strength and weakness of the pulse, prohibit depletory measures;—the fact is, that they strongly point out their propriety, and the system will rise, as if relieved from a load, under their administration. A depressed state of the pulse, in the commencement of febrile disorders, almost invariably indicates the necessity of evacuations; for, on minute investigation, it will be discovered, that it is connected either with local congestion or local inflammation. From the very outset erysipelas frequently assumes a typhoid aspect; but whenever this is the case, some internal mischief may be most certainly apprehended. It has been my misfortune to witness this disorder treated as one of real debility, in numerous examples,—consequently wine, bark, and all sorts of cordials, were by turns exhibited; yet this treatment, so far from supporting the strength, hardly proved successful in a single instance. In this disease, the stimulant practice, I have been informed, is still followed in some metropolitan hospitals; but for the sake of science, and especially of humanity, it is most earnestly to be hoped, that it will soon be entirely abandoned, as it is the most destructive that could possibly be adopted. For some years past, I have closely attended to the nature of erysipelas, and I can conscientiously declare, that I have always found it to be a sthenic disease in the commencement. Like every other

acute fever, it is only asthenic in the last stage, in which an universal collapse occurs, as the mere product of preceding excitement or congestion. These opinions do not rest on speculative grounds; their accuracy has been extensively tried and confirmed, not only by my own experience, but by that of many intelligent friends, in whose hands early and free depletion has been as highly efficacious as in mine. So far indeed has the firm conviction of the superiority of this treatment carried me, that I have generally employed it, to a certain extent, even in old subjects labouring under erysipelas; and instead of having had reason to regret the practice, it has almost uniformly been more or less beneficial. Since the time of Sydenham, the therapeutics of this disease have undergone many changes in this country; and perhaps there is no one concerning which the treatment of modern practitioners differs more widely, but we must return to his good old principles, before we can advance a step towards its improvement.

Those who have had one attack of erysipelas, are extremely apt to have returns of it; and this is especially the case with the simple erysipelas, which indeed is a much more frequent disease than the complicated. Persons who are thus pre-disposed to erysipelas should have the surface covered with flannel, avoid indigestible food, and keep the bowels regular by an occasional dose of castor oil, or rhubarb and magnesia. But whenever the biliary and

intestinal secretions are disordered, a full dose of calomel should be taken, as restoring them to a proper condition will often prevent an attack of this disorder.

There is one variety of erysipelas, which has not yet received that deep consideration from the faculty which its importance and danger deserve. It attacks infants, generally under a year old, and first appears on some part of the upper or lower extremities, leaving one place, and then affecting another, till at last it successively travels over almost all the surface of the body. Nay, I have known two cases where an erysipelas of this nature went twice over the whole skin, in the manner just described. This disease is often produced in infants by cold; sometimes it arises from the irritation of teething, and at other times from an improper diet and disordered bowels. It is usually attended with a considerable fever, and the secretions of the liver and intestines are very morbid, if not at its commencement, at least during its progress. The little sufferer is liable to become delirious, and, if the disease should not be early arrested, generally expires in coma or convulsions within the first three weeks. Though this is a strictly erysipelas phlegmonoides I have not myself seen it produce those large effusions and suppurations under the integuments, which are not uncommon in the extremities of adults attacked by the disease.

Whatever plan of treatment be adopted in the infantile erysipelas, success will be uncertain; yet the following has appeared to me more efficacious than any other. The primæ viæ should be freely evacuated without loss of time, first by an antimonial emetic, and then by repeated doses of calomel and castor oil; indeed, during the continuance of the complaint, copious motions should be daily procured. If the stools should have a sour smell, or become greenish soon after they have been evacuated, a little magnesia and rhubarb ought to be administered, along with the calomel. Soon after the first attack, also, as many leeches should be applied as will abstract sufficient blood to induce faintness, which will sometimes prove decidedly beneficial in arresting the disorder. Although an expert surgeon may generally succeed in drawing blood from the external jugular vein, or the anterior branch of the temporal artery, in infants under a year old,—yet all the benefit which can result from bleeding, may be obtained by the proper management of leeches, which, on account of the highly vascular state of the skin, draw more blood from children than adults. Nay, in this particular instance, local is superior to general blood-letting; because by it you can make a direct and powerful impression on the erysipelas itself, and likewise induce a general change in the circulation, by persevering in it till faintness supervene,—or at least until the child begin to heave at the chest, or to turn pale in the face. In fact the local

bleeding must be carried on until it shall decidedly diminish the action of the heart, otherwise it will do no good; and I wish to be the more pointed in this remark, because from a disregard to it, local bleeding may at once be brought into disrepute in this disease. The leeches may be re-applied, at any time within the first three or four days from the commencement of the disorder, though they should never be recommended at an advanced stage. Sydenham was a great advocate for bleeding in the febrile complaints of children, and in such complaints they generally bear it well in the beginning, particularly by leeches: but when the symptoms have been allowed to proceed unarrested for some days, the strength of children often falls with great rapidity under even local abstractions of blood; and in the advanced stages, therefore, purgative medicines should always be preferred to local bleeding, as the evacuation from them weakens less than any other.

When enough blood has been drawn in the infantile erysipelas, a small blister may often be applied with benefit to the region of the stomach, or between the shoulders. If there be any tension upon the gums they ought to be freely lanced, until the instrument distinctly grates on the hidden teeth; for such free incisions often afford great relief, while superficial scarifications are attended with little or no advantage. The general irritation of the system must be allayed by the occasional employment of the

tepid bath, or by a few drops of laudanum under the form of an enema; but it should always be recollected that infants are rendered extremely irritable by long fasting, and on this account a little light food will often lessen fever, and apparently put them to sleep. It is of great consequence in all the febrile affections of children to allay irritation as speedily and as mildly as possible; for if it should long continue unsubdued, it mostly exhausts their strength and proves fatal at last. On this account, it is of great importance to attend to the state of the vascular and nervous systems, immediately after bleeding in children; and if there should be much quickness of pulse and much irritation combined, a few drops of laudanum and a little food will frequently induce a state of great tranquillity. But so far as my observation extends, excessive irritation only follows profuse bleedings in children, which are almost always prejudicial, from the violent action of the heart which succeeds them; and even under such circumstances, the tranquillizing effects of food and small doses of laudanum are sometimes super-eminently serviceable. Yet it is only in cases where great irritation exists, that laudanum should be used for children; and I have reason to believe, that much smaller doses should be given than have been usually recommended by systematic writers. For small doses will often effectually allay irritation when full ones would only produce oppression; and where a small dose fails to allay irritation in children, it is

better to repeat it, than to venture upon a full dose at once. As the infantile erysipelas is often so very formidable an infection, would it be allowable to use incisions or scarifications on the parts affected? And as these have been ascertained to be serviceable in the erysipelas of adults, and as leeching has also been so in the disease in question, is it not probable, that they might answer a good purpose, if early and judiciously employed?

RHEUMATISM.

There are yet some diseases, requiring the depletory practice, to which I wish to advert, and the acute rheumatism is one of them. At different periods, my treatment has been more varied in this, than perhaps in any other complaint, simply because for a long time none appeared to me sufficiently successful. On repeated trials, however, at last I found, that very early venesection, first succeeded by purgatives, and next by calomel, opium, and antimony, was by far the best plan, when followed up by local bleeding, blistering, the warm bath, and an antiphlogistic regimen. But it ought always to be recollected, that acute rheumatism is much more remediable at the first invasion, than when it has remained for some days; and as I was not so fully aware of this interesting fact as I should have been when my former remarks on this subject were sent to the press, I am now induced to impress it more

deeply upon the minds of others. Many febrile diseases seem to have a sort of determined duration, when they are allowed to proceed without interruption for a certain period; and this is so remarkably the case in acute rheumatism, that many practitioners have inferred its course cannot be shortened even when encountered from the first. But I am now thoroughly convinced, that this disease would seldom be protracted, and by consequence would far less frequently put on a chronic form, if evacuants and alteratives were promptly used at the commencement; and deeming this to be a practical truth of much importance, I would repeat it again and again, that practitioners might be awakened to that promptitude and decision which most acute attacks of this affection demands.

On the first attack of the acute rheumatism I generally used to order from twelve to twenty ounces of blood to be abstracted, then to purge the patient briskly for about two days, and afterwards to saturate the system with calomel, combined with sufficient doses of opium and antimony to allay pain, and excite a gentle perspiration. There was commonly an obvious relief of symptoms as soon as the mouth became tender. By maintaining the specific action of the mercury for about ten days, and by keeping the bowels in the mean time soluble, the cure was most frequently accomplished, in cases which had thus been treated from the beginning. In several

instances, however, which fell under my observation since the first edition of this treatise was published, I have repeated the general venesection promptly, when the first operation failed to give a marked relief; and wherever this practice has been employed, and speedily followed up by purgatives, with calomel and opium, the recovery was extremely rapid. The results of my own experience, therefore lead me to conclude, that acute rheumatism may in general be quickly arrested at the beginning by proper applications; and perhaps future experience will bear me out in the opinion, that it is, for the most part, only a protracted disease when palliatives are used, instead of powerful measures at the onset. It must, however be admitted, that when acute rheumatism has existed unimpededly for a few days, the best expedients will not reduce it at once, though they will commonly lessen its intensity and shorten its duration. In the treatment of acute rheumatism, as of simple inflammations of the viscera, we must not expect bleeding, purging, and alteratives to be successful when separately employed: but it is in the combined agency of all these, brought rapidly to bear on the disorder, that we must look for the full effect; and to censure these measures one by one, because they each may fail, is to disregard their conjoint influence in their particular properties. When the specific action of mercury has been obtained after bleeding and purging, it ought to be wholly omitted, or only given in very small doses, according to the degree of its

influence: and the bowels should still be daily moved, for the employment of purgatives always accelerates recovery in the most acute cases, and where the disease has been partly broken at the first, no medicines are more beneficial; but in such cases as the last they should be daily administered for some time, and upon the whole the sulphate of magnesia and castor oil, especially the latter, will be found to answer the best purpose.

As the pain is often excruciating in the acute rheumatism, I must warn the inexperienced not to let the circumstance induce them to prescribe opium in large and repeated doses; for by such a procedure I have known some patients become almost comatose, and actually saw two who had been forced into an apoplexy by the too free exhibition of this drug. Neither agreeably to my observations, is the common practice of applying rubefacients, to the parts affected with the most violent pain, at all a safe one; at least in four cases where they were thus employed, the rheumatism receded from the integuments, and in three of them the heart was attacked with inflammation, and the intestines in the fourth. One of the former, and the last did well by bleeding, a mercurial course and blistering; but the other two examples were fatal under a similar treatment. The acute rheumatism, too, sometimes suddenly recedes from cold air applied to the skin, when there is a free perspiration; and I once saw an instance of this kind,

caused by getting incautiously out of bed in a winter's night without clothing, in which the patient sunk with great rapidity, apparently from an affection of the heart. But rheumatism may exist in the joints simultaneously with an inflammation of some of the viscera; and within the last year I met with two such cases, both of which did well, though in one the liver, and in the other the pleura was inflamed. Leeches to the seat of the rheumatic affection sometimes do a great deal of good, after general venesection; and so far as my experience has extended, they are perhaps the only local applications which may prove useful, without the risk of causing translation. As remedies calculated to promote a general change in the system from counter-irritation, I have sometimes applied blisters, with advantage in acute rheumatism, to the region of the stomach or between the shoulders; but the former place is generally preferable, on account of the great sympathy which the stomach has with all parts of the body. When, however, on the sudden subsidence of the external pain and inflammation, some of the viscera are attacked, the blisters should always be put over those parts where the disease had originally existed, as their power of counter-irritation is useful, particularly when excited on those parts. As local applications, Dr. Balfour of Edinburgh, in an ingenious publication, has lately called the attention of the faculty to the utility of bandages in rheumatism; but I regret extremely, that the trials made of this

method in my practice have not fulfilled his anticipations. It is well known, that rheumatism most frequently arises from the vicissitudes of the weather, and that persons who have once been attacked are liable to repetitions of the disease. One of the best preventives of this complaint in the first instance is a good covering of flannel or fleecy hosiery next the surface: and the one or the other of these should be almost always worn by persons who have had an attack, else they will be extremely liable to relapses; but by those to whom flannel or fleecy hosiery is uncomfortable on account of its irritating the skin, wash-leather shirts may be worn under their linen, for they keep the surface very warm.

OPHTHALMIA.

Were I desired to adduce a particular disease for the purpose of establishing the efficacy of bleeding, in the way so often recommended in these pages, it should certainly be the acute or sub-acute ophthalmia; because in both the effect would be more immediately manifest than in almost any other disorder. There is perhaps hardly any simple inflammation more under the control of the medical art than that of the eye, and yet there is perhaps hardly any in which we, in some measure, more frequently fail in our general practice. The reasons are simply these,—instead of adopting early and decisive means, we for the most part satisfy ourselves with merely

secondary ones, such as local bleeding by leeches, lotions, and the like; and therefore we generally find the disease protracted and obstinate. Once more, I must earnestly protest against half-measures, especially in this affection, which involves the functions of an organ of such high utility and importance. In numerous instances I have seen the eye either greatly injured or totally lost from inflammation, the progress of which had not even been retarded by the ordinary routine of treatment. If any one wanted to have demonstrative proof of the uselessness of indecisive, and the efficacy of decisive bleeding, he might easily obtain it in a recent case of ophthalmia. Abstract a small quantity of blood from the arm of any patient labouring under such an affection, and, provided it does not influence the pulse, there will commonly be as much pain and intolerance of light after the operation as before it. But let blood be taken away until the face turn pale, the pulse begin to flutter, or until some degree of faintness be evident, and the patient after the operation will most frequently be able to open his eyes, and look about him, expressing wonder at the change so soon produced. An experienced surgeon, with whom I have long had professional intercourse, always bleeds his patients afflicted with inflammation of the eyes from a large orifice, as they stand erect upon the feet, and this is the mode which I too have generally preferred; having found, as before stated, that it sooner makes an obvious and great impression upon the circulation than any other, and

thereby enables us to attain our object by a moderate abstraction of blood. The tunica adnata, which before venesection had been completely red, will often be found comparatively blanched after it, with a most sensible relief in almost every other respect. In the majority of examples, I have not known it requisite to bleed more than once in this impressive mode, and even in the most urgent cases, rarely more than twice, when the inflammation was attacked at an early period; but then the general venesection has been almost uniformly succeeded by local blood-letting with leeches, scarification of the eyes,* brisk purgatives, blisters behind the ears or on the neck, and, sometimes by calomel and opium, where the disorder has been unusually obstinate. In all cases, indeed, I have used opiates after decisive depletion, and they have uniformly been more or less beneficial. As for lotions, so universally advised, I have seldom recurred to them in the acute or sub-acute inflammation of the eyes, having effectually succeeded without them. Although the above remarks are designed to be mainly limited to the ophthalmia arising from common causes, yet they may be usefully applied to those inflammations of the eyes, which supervene the operations of couching and extraction: and I am the more anxious to mention this, because some oculists of distinction do not deplete sufficiently in them, but

* Scarification of the lining of the upper and under eye-lids is often of very great service, and it should always be recurred to in severe or obstinate cases.

rather trust to cold applications, and other secondary measures, by which they may often deceive themselves, and disappoint their patients.

Even in chronic ophthalmia general venesection is frequently of more benefit than any other measure, and where the structure of the eye remains uninjured, it should be more commonly used than it is at present: but I must observe in this place, that when chronic ophthalmia is seated in the tunica adnata, and not the sequela of a previously acute inflammation, it is far more frequently symptomatic of some disease in the brain than has been supposed; and whenever it is thus a secondary affection of the cerebrum, it can only be removed by bleeding and other means, which remove the original and distant disorder. Yet chronic inflammation of the eyes themselves often arises from gradual accumulation of blood in the lining of the under and upper eye-lids, which are thereby made to press upon, and to irritate the eyes into inflammation. In every case, therefore, of chronic ophthalmia, this membrane should be examined, by inverting the eye-lids a little with the fingers; and whenever it is found preternaturally distended with blood, scarifying it freely and repeatedly will generally be attended with the best effects. Small specks are apt to form upon the lucid cornea, in the progress of chronic ophthalmia, and so are small ulcers, which may easily be confounded, at first, with the former; but to prevent mistakes of this kind, a small ulcer

may always be distinguished by its being indented in the middle, whereas a common speck is almost always prominent at that point. By having been mistaken for specks, I have known ulcers allowed to commit considerable ravages on the construction of the eye; but if a solution of the nitrate of silver be opportunely applied, it usually soon heals ulcers of the cornea, and indeed often proves efficacious when they had existed for a considerable time. It may finally be observed with respect to chronic ophthalmia, that the sulphureous waters of this country will frequently remove it, when every other measure had previously failed; and this is more especially the case when chronic ophthalmia is connected with the strumous temperament, a circumstance by no means uncommon.

TIC DOLOUREUX.

Dr. Samuel Johnson tells us, in his biography, Boerhaave well knew that the originals of distempers are often at a distance from their visible effects; and the justness of this observation may at once be illustrated by a very remarkable example. It has been supposed, that tic douloureux is primarily seated in the nerves of the face, and the able and ingenious Dr Parry of Bath has modified this the general hypothesis of the times, by placing the disease in the capillary vessels ramified upon the facial nerves. But, with every respect to the opinion of this dis-

tinguished individual, tic douloureux appears to me to be a complaint of the brain itself, to which the disorder in the face merely stands in the relation of an effect. This opinion has been impressed upon me by a careful examination of the cases which have fallen under my own eye, in the whole of which the affection of the face was preceded and attended by clear manifestations of cerebral disease, such as pain, giddiness, confusion, or some other uneasiness in the head, more or less disorder in the functions of some of the external senses, with symptoms of congestion, or of increased action in the vessels of the brain;—and sometimes the stomach and liver were simultaneously or sympathetically affected, a circumstance not uncommon in many diseases of the sensorium. That tic douloureux should have its origin in the brain, will not appear at all surprising to those who have directed their attention to the pathology of that organ; since in several of the disorders to which it is liable, what might seem, at first sight, the most urgent symptom, is seated at a distance from its source: and indeed this happens in other diseases, as may be instanced in certain forms of hepatitis, where the pain is most severe at the top of the shoulder, and in certain affections of the hip-joint, where it is most severe in the knee.

Considering how very little had hitherto been effected by treating tic douloureux as a mere facial disease, and being forcibly struck with the appear-

ances that indicated its seat to be in the brain, I resolved to try, under favorable circumstances, the power of decided bleeding and purging. The first two cases in which this treatment was pursued, had not existed six weeks, and both of them yielded to it without much resistance. It was afterwards adopted in three others, of as recent a date, with the same result; and it was successful in another of much longer standing, by being followed up with calomel and opium. As in most other diseases of the brain, it has been usual with me in this to combine general with local blood-letting, and not only to continue the use of purgatives for some time, but also to apply blisters occasionally, either to the scalp or to the nape of the neck. From one case which I have myself seen, and from two others of which I have heard, it seems to me most probable, that the depletory practice will not generally succeed, in those examples of tic douloureux which have continued some years; although, when judiciously employed, and succeeded either by an alterative course, or by small and repeated doses of arsenic, it will perhaps afford the fairest chance. Why the chronic may be very different from the recent tic douloureux, a little reflection will readily reveal. In the commencement, this disease merely consists in disordered action, but when it has continued a long time, that disordered action may have produced derangement of structure, or at least such a confirmed dilatation, or other morbid condition in the cerebral vessels as cannot be

removed. It is certain that persons afflicted with tic douloureux may live many years, and even sometimes have the appearance of good general health; but it will, I believe, be found that they most frequently die suddenly at last from oppression of the brain; which tends to strengthen the opinion here advanced, as to the original seat of this disorder.

There is a peculiar affection of the brain, which is nearly allied to tic douloureux; but instead of fixing on the face, the pain, which most attracts attention, is seated in one of the fingers, and most frequently under the nail. So very severe is this pain, that some patients whom I have attended could not be convinced but that the disease was solely confined to the finger, though they were afflicted with giddiness, and what they called nervous head-aches, noise in the ears, occasional dimness of sight, some degree of deafness, and other alarming symptoms. There is seldom redness or much swelling perceptible on the affected finger, but it is generally sore to the touch, and the pain at times greatly abates, and again becomes urgent. This disorder requires a treatment similar to that of tic douloureux, and local applications are of no utility. There is one case of this kind on record, in which amputation of part of the finger afforded no relief; and another has been reported to me on good authority, where the operation likewise completely failed. Nor will this appear surprising when we consider, that the pain of the

finger is dependent upon a distant derangement, and therefore can only be removed by removing the cause from which it proceeds.

Periodical head-aches are also closely related in their pathology to the two diseases just mentioned, for, like them, they most frequently arise from congestion or increased action in the vessels of the brain; and are therefore remediable upon similar principles. From an extensive experience I am authorised to affirm, that they may in general be speedily removed by one decisive blood-letting, with a few brisk purgatives, succeeded by the cautious exhibition of Dr. Fowler's solution of arsenic; a preparation which should always be given immediately after a light meal, otherwise it will be apt to disagree with the stomach. In two instances only, I have known the arsenic fail, after depletion, in the periodical head-ache, and both being complicated with hepatic disorder, they were afterwards cured by calomel and opium.

CALOMEL AND OPIUM.

So much having been said about calomel and opium in the inflammatory typhus, and other diseases attended with similar conditions of the circulation, perhaps it may be satisfactory before proceeding further to inquire, who may be entitled to the merit of introducing this combination, as a *general* remedy

for inflammatory affections. It is well known, that quicksilver was a component part of an unguent, which Rhazes used and recommended in cutaneous disorders; that the preparations of this mineral were long afterwards most successfully applied to the cure of syphilis; and that, more recently, their efficacy was established in hepatitis, first by Eastern, and afterwards by European practitioners. Mercury, then, was first successfully employed in three different kinds of inflammatory diseases, and though with the most signal advantage in two of them, no person as yet had inferred its *general* utility in inflammation; the honor of that discovery having been first reserved for the late Dr. Robert Hamilton of Lynn Regis. This author candidly acknowledges, that, at the close of the year 1764, a naval surgeon who had served eight years in the East Indies, informed him, that the established method of curing hepatitis in that country was by mercury, after venesection, and the exhibition of a gentle purgative. Some patients falling ill of that disorder at Lynn Regis, soon after the arrival of his friend, Dr. Hamilton tried the method of cure by mercury, and it proved successful. He used the ointment in very few instances, and gave no preparation internally but calomel; to which, however, he shortly found it necessary to add opium, in order to relieve pain, which answered that purpose most effectually. This success led him into the following train of reasoning. The efficacy of mercury in ophthalmia had been long established, and its spe-

cific virtue in every symptomatic venereal inflammation; its liberal use in the modern way of inoculation had also shewn its power of abating inflammation; while its success over the hepatitis in India, and in the late instances of that disease which had passed under his own eye, were fresh proofs of its excellence. Reflecting on these things, he was led to consider, that the general cause, be what it may, of an inflammatory diathesis, must be the same, whether the inflammation is seated in the meninges, pleura, lungs, liver, diaphragm, or any other internal membranous part; and, therefore, the circumstance of locality could make little or no alteration in the general intention of cure. From these premises the following deduction, according to his view, naturally arose;—that as mercury had been so successful an agent in the several instances above mentioned, it was reasonable, from analogy, to conclude, that it would prove equally so in every kind of inflammatory disease;—wherefore he was determined to give it a fair trial in every one, as opportunities offered for that purpose. Peripneumony was the first disease that fell under his care, after this resolution was made; and he informs us, that the success of calomel and opium in it filled him with astonishment. Afterwards he found this combination equally efficacious in pleurisies, in phrenitis, and paraphrenitis; in inflammations of the intestines and other parts within the abdomen; and in child-bed fevers, with highly inflammatory symptoms. Having succeeded in curing

local inflammatory diseases, by this practice, he tells us, that his experiments were next directed to what he calls a malady of general inflammation, the acute rheumatism; that he had the satisfaction to see this also give way most readily to it: and that himself as well as some of his friends repeatedly experienced, in their own persons, the most salutary effect from it, when attacked by that distressing disease the gout. It appears, likewise, that he saw equal advantage result from the calomel and opium, in inflammations arising from external injury, either in the head, thorax, or abdomen, as he experienced in those arising from an internal cause.

Having named the disorders in which his first experiments proved successful, he proceeds to give a detail of his general mode of practice, since that period in all inflammatory distempers: from which it is evident, that he did not entirely trust to calomel and opium, their administration being premised by evacuations. Blood was directed to be taken away in the beginning of the disease, in quantity proportioned to the violence of the inflammatory symptoms, and to the age and constitution of the patient. The bowels were next ordered to be opened, either by a clyster, or, more commonly, by a gentle purgative. After which, a composition, consisting of from one to five grain doses of calomel, and from a quarter to a whole grain of opium, was administered every six, eight, or twelve hours, according to the age and

strength of the patient, and to the degree of inflammation; a plentiful dilution of barley-water, or any other weak, tepid beverage, having been at the same time strictly enjoined. The patient was generally very much relieved, after having taken three or four doses of this medicine in the course of twenty-four hours; and the distemper commonly gave way in twenty-four hours more, and soon terminated afterwards. But if relief was not obtained within the first twenty-four hours, and the high inflammatory symptoms remained with little or no abatement, which the author affirms was rarely the case, he ordered more blood to be abstracted; and not only exhibited the mercurial composition more frequently, but continued it until the distemper resolved, by sweating, purging, or ptyalism. If this curative mode was employed early in the disease, the patient's recovery was soon accomplished, whatever might be the operation of the mercury; whether it acted on the skin, bowels, or salivary glands. But if employed late, it was attended with more uncertainty, though recovery most commonly took place the soonest when the salivary glands were affected. If the fever was violent, accompanied with a dry, contracted, arid skin, emetic tartar, and sometimes camphor, was added. And the author states, that he never found any medicine, either in a simple or aggregate state, produce so speedy and effectual a relaxation of the skin, and a plentiful perspiration, as a composition of calomel, opium, emetic tartar, and camphor, which

also has the advantage of increasing the evacuations by stool and urine. He appears to have frequently directed blisters to be applied, especially at an advanced period of any visceral inflammation, conceiving them to be very powerful auxiliaries to the internal method of cure. After the distemper was evidently on the decline, he seems to have been rather partial to the exhibition of bark, particularly in the acute rheumatism, but always took care to keep the bowels soluble.

It had been alleged by some, says Dr. Robert Hamilton, that, as other powerful medicines had frequently been joined to the calomel, the cure might, with greater probability, have depended upon them than the mercury. He candidly acknowledges, that he always deemed opium of the most essential service, by relieving pain; and allows that he thought the emetic tartar and camphor sometimes contributed to the cure. But he pointedly remarks, that he had very often seen cases where emetic tartar, camphor, and opium, assisted by saline remedies, had been employed without the smallest relief in inflammatory diseases, which, nevertheless, gave way in a short time, on calomel being added. And he states, as a fact well known at Lynn Regis, that calomel and opium, had very often succeeded without any other addition, from the first exhibition of mercury there to the then present time, in inflammatory diseases; and that even with the additions above

named, many inflammatory diseases shewed no amendment, until the salivary glands were affected, a circumstance which was generally regarded, by himself and other practitioners, as the happiest presage of recovery. He concludes his summary account, by declaring that the subject of it is not the hasty result of a few months practice, but that it is founded on the solid basis of nearly eighteen years successful experience, to which many of the principal practitioners of the town where he resided, could bear the most ample testimony.

The above is an imperfect abridgement of the paper originally published by Dr. Robert Hamilton,* which, notwithstanding some of its defects, deserves to be engraven in letters of gold, on account of its great practical application and utility. The defects alluded to are, that both the lancet and purgatives, at the outset, appear to have been used too sparingly by the author; and that the doses of calomel recommended were either too small, or too seldom repeated. At least, if my experience has not greatly deceived me, his method of cure, if strictly followed, would often be inefficient in highly acute cases, which obviously require, by reason of their rapid progress, a more powerful and prompt application of

* See, in Medical Commentaries, for the years 1783—84, Vol. IX. p. 191, a Letter from Dr. Robert Hamilton, Physician at Lynn Regis, to Dr. Duncan, giving an account of a successful method of treating Inflammatory Diseases, by Mercury and Opium.

remedies. Still, however, it must be confessed, that his principle of the successive use of bleeding, purging, calomel and opium, cannot be too much regarded and admired; and so far has he advanced in the pathology and treatment of all common membranous inflammations, that future practitioners will, perhaps, have little more to do than to modify the application of the measures which he has recommended. That many an invaluable discovery in physic has not been duly appreciated during the life of the author; and that this was, in a great degree, the case in respect to that here adverted to, can hardly be disputed by any one conversant in medical literature. Accident often appears to produce some fact capable of great extension, and although it may have been repeatedly observed by many, yet it can only be generalized by an active mind, accustomed to contemplate impressions; as the falling of an apple is said to have led Newton to the discovery of the laws by which the heavenly bodies are regulated. It is only fair to acknowledge, that some enlightened authors, and also some respected friends whom I could name, have inferred, from their own observation, the general anti-inflammatory power of calomel and opium; so that their testimony might now be adduced in support of the doctrine of Dr. Robert Hamilton. And if most of his contemporaries unfortunately failed both to extend the usefulness of his researches, and to do justice to his desert, yet surely his memory will be embalmed by posterity

among those of the favored few, who have proved real benefactors to mankind; since the time is rapidly approaching when, in every department of philosophy, bigotry and prejudice will give way to liberality and truth. But, in returning to the prosecution of the subject, it may be observed, that great as the efficacy of calomel and opium unquestionably is in inflammatory affections, the use of this composition ought not to be limited to them alone, as will be satisfactorily shewn in the treatment of the congestive typhus, and other diseases of a similar character.

TREATMENT OF THE CONGESTIVE TYPHUS.

In both its simple and inflammatory varieties, typhus is unquestionably a disease of excitement; but this cannot be said of it under its congestive forms, in the most violent of which there is no intermediate stage of re-action; and even in the less urgent, the evidences of re-action are so partial, transient, or irregular, as hardly to deserve that denomination. Almost every fever has a stage of oppression, however brief it may be, but those cases only deserve to be called congestive, in which it is so great as either wholly to suppress the excitement, or to render it very partial and irregular. Sometimes the stage of oppression is apparently pretty strongly marked for a short time, and, gradually or suddenly receding, is followed by one of regular excitement, so that the disease afterwards runs its course under a simple or

an inflammatory character, but more frequently under the latter. The following observations, however, are not designed for such cases, though it may be noticed, that their first stage requires the same principles of cure as are suitable to the strictly congestive fever, and that the subsequent stages must be treated according to the rules laid down for the simple and inflammatory typhus.

If the congestive variety of typhus does not comprehend the different characters of what some authors have been pleased to call the low malignant, contagious fever of this country, I profess myself incompetent to understand their meaning; unless their descriptions be considered as likewise applicable to the last stages of the simple and inflammatory typhus. Highly as I admire the writings of Dr. Cullen, for his general accuracy of delineation, it has always struck me, that his definition of typhus, notwithstanding its extensive adoption, is very defective; in reality, it is nothing more than an enumeration of some of the leading symptoms, which accompany the last stages of the simple and the inflammatory typhus, and the commencement of the congestive. It therefore at best only embraces a small part of the disease, and neither accurately discriminating stage nor variety, cannot but be very dangerous, from the authority of his name. In the course of my experience, I have seen a great number of patients afflicted with typhus, and can with confidence declare,

that there are no substantial grounds for believing it to be a low fever of real debility, when fairly contemplated from the time of its attack; for even in the congestive species the debility is apparent, rather than real in the first instance, as will be made evident by the nature and effects of the remedies employed.

Some cases have already been given of the worst sort of congestive typhus, of which the terminations, under the common modes of treatment, were fatal; and one has been particularly noticed, which ended successfully by very early bleeding, purging, and the warm bath. This brief statement nearly accords with the result of my observations in regard to such examples of contagious fever; since whenever treated, from the beginning, solely by palliatives and cordials, the event has been mortal; whereas a great many have proved favorable in which a different line of practice was pursued: although it must not be concealed, that the most judicious plan will not always succeed in the concentrated attacks of the congestive typhus which, like a resistless apoplexy, will sometimes set every remedy at defiance. But if failures of this sort shew the occasional inefficiency of depletion, they certainly do not disprove its general utility, since there are cases of other acute diseases, wherein the best measures are now and then wholly unavailable; as might be instanced in carditis, pneumonia, and similar affections, in which no per-

son has the hardihood to dispute the general advantage of early evacuations.

In the severest cases of the congestive typhus, there is from the beginning great *apparent* debility, which speculative men have considered as *real*, and which they have attributed, to the direct influence of the contagion as a sedative, without ever reflecting that it chiefly depends upon the changes which take place in the circulation; and that it is no more to be accounted positive exhaustion, than the loss of muscular power, which precedes and accompanies the threatenings of general apoplexy, to which disease, in fact, this form of typhus has often a most forcible resemblance. In general it comes on very suddenly; and what magical change, it may be asked, has been wrought in the system in the period of a few hours, that the subject, who the moment before his sickening might have been largely bled without the least prejudice, should now, that he is actually indisposed, be all at once pronounced incapable of bearing the smallest abstraction of blood? To permit ourselves to be influenced by preconceived theories and puerile fears, on such emergencies, is in effect to conjure up ideal phantoms which paralyze our energies, when they are most urgently required. Abstract but the idea of contagion from cases of this nature, and we should be prepared to meet them boldly, as we would any other alarming disease of congestion, from the mere impression of the promi-

nent symptoms. And why in our maturer deliberations should the assurance, that the morbid phenomena have proceeded from contagion, prevent us from using the remedies which for similar symptoms, arising from a different cause, we should not hesitate an instant to employ? In a rational practice, it is not surely necessary always to form our indications of cure from the consideration of the *primary cause* of any disorder; in general, it is only to the effects produced on the various parts of the system that our remedial agents ought to be applied; and wherever the effects are nearly or precisely similar in two acute diseases, it may be held as an axiom, that the principles of treatment ought also to be nearly or precisely similar; though the one originated in cold, and the other in contagion, or in any other opposite causes. It is the very error of the schools to avoid early depletion, on account of supposed exhaustion; and it is truly surprising upon what slender grounds men of as gacity, and even of great experience, have rejected venesection in congestive fever. The late Dr. John Clark of Newcastle, for example, who was one of the best practical physicians of his day, speaks decidedly against it, merely from an imperfect trial of it in two or three cases; and he seems never to have had the courage to give it a fair and full trial afterwards. The assertions of such weighty characters, founded upon partial observation, and defective evidence, have done incalculable mischief; and they clearly shew how necessary it is for future authors to avoid

those sweeping conclusions, which have been so often and so confidently drawn from a few solitary facts, usually contemplated through the medium of some favorite hypothesis.

It has already been shewn, that there can be little or no certainty in the treatment of the simple and inflammatory typhus, without marking their various stages; and the same may be affirmed, with perhaps still greater force, of the worst forms of the congestive typhus, in which the first stage of oppression is often exceedingly short; and as it affords the only period in which medical assistance is likely to be available, it is to the last degree important to distinguish it from the stage of universal collapse. Acute fevers, of whatever kind, may be practically considered, in their commencement, as merely disordered states of the circulation generally and locally, which may be most frequently corrected by the opportune application of proper means; but if in the more urgent examples those disordered states be permitted to exist for a short time, they produce both derangement of function and structure, which no human power can repair. These remarks are especially illustrative of the worst forms of congestive fever, in which the stage of oppression, as it is not followed by an intermediate one of excitement, passes directly into that of collapse,—disordered action being most commonly succeeded by organic lesion.

It is in the first stage only of the highly congestive typhus, that general blood-letting is admissible with a view of relieving the local congestions, and of restoring the natural balance of the circulation. The practitioner must not fix upon a determinate quantity of blood to be drawn, but rather be guided by the effects produced. Sometimes eight or ten ounces will be quite sufficient, and at other times, sixteen, twenty, or even more at one time may be requisite to relieve the topical engorgements, and put the general circulation into proper play. The action of the heart is often so much overpowered in the first instance, that the blood merely trickles, or rather oozes from the punctured vessel for a considerable time, being much darker and thicker than natural. Yet when a few ounces have been drawn, it usually flows with freedom, and becomes finally of a brighter colour. Occasionally, I have stood over a patient nearly half an hour before a stream of blood could be obtained from a vein, but at last it gushed out in a full current, and was not so easily restrained as in ordinary cases. Many a life might be lost by binding up the arm too hastily, and therefore the operator should persevere, until he knows whether enough blood can be obtained. As the engorgements are in a great measure venous in the congestive typhus, my common practice for a long time was, to order the jugular or brachial veins to be opened, conceiving that blood abstracted from one of them would sooner

relieve the system than from an artery. But finding in some cases that a sufficiency of blood could not be obtained from the veins, I was induced to order the opening of the temporal artery; and where the operation was skilfully done, not only enough blood was procured, but a more immediate change appeared to be effected in the whole vascular system, than by venesection simply. The circulation of the blood, it is well known, is partly carried on by the *vis a tergo*, especially that of the venous system. Now in the highly congestive typhus, the energy of the heart and arteries is greatly oppressed from the beginning; and the *vis a tergo* being thereby diminished, the blood must necessarily flow much more languidly in the veins, and of course be less easily abstracted from them than under ordinary circumstances; while it must be equally evident, that it may at first be more readily procured from the arteries, where a comparatively freer current is still maintained. Whenever therefore blood cannot be obtained from the veins with a freedom or celerity commensurate to the urgency of the symptoms, the temporal artery should be opened. And though my experience has not yet enabled me to determine whether arteriotomy be *generally* more efficacious than venesection in congestive cases, yet whenever the head is greatly affected, which often happens, the vessel just mentioned should always be punctured, as by so doing I have frequently seen patients rescued from impending death.

In great congestions, the pulse generally rises under or immediately after blood-letting, but sometimes continues oppressed, and even weaker than before. When both it and the general circulation become manifestly freer, with a warm moist skin, tepid diluents should be the only beverage recommended; yet when it still remains oppressed, and the tide of the circulation does not return to the surface, and more especially if blood has been freely drawn, a little wine with warm water should be occasionally exhibited, and the patient speedily immersed in a bath, strongly impregnated with salt, about the temperature of 100°. of Fahrenheit's scale. On being removed from the bath, his skin should be well rubbed with flannels dipped in warm spirits or oil, and he ought then to be laid in an aired bed, with bottles of warm water at his feet. This plan, together with a little tepid wine and water occasionally, will often promote a flow of blood towards the skin, and considerably relieve the viscera from congestion.

If the bath can be expeditiously prepared, it often has an excellent effect to immerse the patient in it first, and either to bleed him while he remains in it, or immediately after he leaves it; indeed in some severe cases, I have found it impossible to get sufficient blood until a warm bath had been premised, so oppressed was the general circulation before its employment. But where the bath cannot be obtained in time, stimulating unctions must be used instead

to the surface, which are sometimes very serviceable. The ancients, as the writings of Hippocrates and Celsus testify, paid considerably more attention than the moderns to the use of the bath and friction of the skin in febrile disorders; though a recent author of ingenuity, has justly dwelt upon their importance.* If the functions of the skin can be properly restored in congestive fevers, recovery will generally succeed. It has often struck me, that the vapour bath would be an excellent remedy in such cases, combined with the friction of some warm or stimulating liquid, to promote perspiration. It is much to be regretted, that in common practice a great deal of valuable time is often lost before the common bath can be made ready, but a steam one might be soon obtained by a very simple apparatus, which ought to be kept in every house.

* See Reflections on Fever. By Robert Calvert, M. D. London: printed for J. Callow, 1815. Though the principal part of my essay on typhus had been written long before the publication of the above work, I did not like to pass it unnoticed; because, independently of all theory, it contains some most judicious remarks on the treatment of fevers, and especially on the utility of restoring the natural functions of the skin. The author's pathological views of fever will be found in many respects different from mine, even his principal one, which relates to the loss of balance in the circulation. He considers, that this loss of balance may be occasioned in two different ways, viz. on the side of depletion, when the egress exceeds the ingress; or on the side of fulness, when the ingress exceeds the egress; whereas I have simply placed the loss of balance either in a morbid fulness of the veins or arteries locally, or in a general change of capacity, relatively, between the venous and arterial systems.

The means just mentioned must be promptly applied, and followed by others with as little loss of time as possible. The bowels should first be evacuated by very large stimulating enemata, and then by full doses of calomel and jalap, whilst a large blister should be applied over the region of the stomach or liver. Well knowing that the bowels are commonly very torpid, and that every moment is inestimably valuable in such rapid cases, I have generally given a scruple of calomel at first, repeating smaller doses three or four times on the first day of the attack, with the medicines above named; and when the bowels have resisted their united influence, saline purgatives have been added, that no time might be lost. The great advantages of this vigorous practice are, firstly, that you commonly obtain free evacuations in a short time, which could hardly be obtained at all under the ordinary mode, or at least but with considerable delay; and, secondly, that you most frequently obtain the alterative operation of the calomel within the first or second day, which is a circumstance highly to be desired. For a long time I overlooked one of the principal effects of calomel in congestive fevers; till at last it was forced upon me, by patients almost invariably recovering with rapidity, when ptyalism was excited.*

* In what has been called the malignant pestilential fever at Grenada, Dr. Chisholm gave mercury many years ago; and from an able paper which he recently published, in No. 51 of the Edinburgh Medical Journal, he now appears to think, that it was of a decidedly congestive character.

The power which calomel has in equalizing the circulation is no where more conspicuously displayed, than in diseases of a congestive character. Before its exhibition the skin will be cold, wan, and shrunk; the pulse feeble or oppressed; and the whole system apparently relaxed: but as soon as the mouth is made sore from its influence, the skin becomes warm, reddish, and distended with the vigorous circulation, while the pulse is full, soft, and strong, and the general energy in a great measure restored. Anxious to procure the purgative, as well as the specific operation of calomel on the very first attack of the congestive typhus, I have seldom combined any opium with it until an action has been established on the intestines, after which small doses of opium, antimony, and camphor, may be added with considerable benefit. The liver is intimately concerned in the pathology of congestive fevers, and for the first day or two the alvine evacuations will commonly be found either as dark as tar, or whitish and slimy, though they speedily become natural when ptyalism takes place.

When the tenderness of the gums and the peculiar fetor of the breath mark the developement of the mercurial action, the calomel should be either entirely omitted, or only given in such small quantities, as to insure the moderate continuance of the ptyalism. For though the experience of every successive day tends more firmly to establish my faith in the efficacy

of large doses of calomel in highly congestive diseases, yet when they have once fairly made the desired impression, I am most assuredly no advocate for repeating them: only considering such an extraordinary practice requisite, or even justifiable, during the urgency of extraordinary cases.

From what has been advanced, it will be evident, that bleeding, the tepid bath, frictions of the skin, calomel with purgatives and blisters, are the chief expedients in the highly congestive typhus; and even these must not be expected to succeed, unless very early and decisively employed. Indeed if a very powerful impression be not made within the first twenty-four hours, little good can afterwards be effected; so rapidly does the stage of collapse supervene, when the visceral congestions are not diminished soon after the attack. It is perhaps to practitioners having so frequently lost or neglected the first brief stage, that the extreme fatality of the highly congestive typhus ought to be attributed, rather than to its irremediable nature; although, as before hinted, it will sometimes baffle the best measures, however promptly and judiciously employed. Venesection, in particular, can only be beneficially used at the very commencement of the most severe cases of this kind, and even then it ought to be rarely repeated, provided a sufficient quantity can be obtained at the first operation. But it will sometimes happen, on account of the extreme oppression

of the circulation, that only two, three, or four ounces can be procured at the first bleeding: and although this small quantity may now and then relieve the congestions, and bring about re-action, yet it will most frequently produce little benefit; and therefore a second operation may be required, which should generally be performed at no great distance of time from the first. A moderate and early abstraction of blood is exceedingly well suited for such examples of fever, but large and especially repeated venesections would only defeat the purpose in view, by sinking the powers of the general system so far, as to render them incapable of producing that degree of re-action requisite to restore the natural balance of the circulation. Venesection should be rarely carried to syncope, since that state not unfrequently prevents the developement of arterial re-action in cases of this nature, and thus contributes to sustain the venous congestions. When a proper portion of the vital fluid has been abstracted, so as to relieve the immediate pressure of the congestions on the vital organs, the remainder of the cure must be accomplished by the measures already recommended. There are, however, some cases in which venesection must be used with great care, as, for instance, when aged or infirm subjects are attacked with the congestive typhus: under such circumstances, brisk purgatives, the rapid saturation of the system with calomel, the warm bath, and blisters will sometimes be found the best remedies; although when the head and liver

are at the same time seriously affected, it will be requisite to draw blood, in order to give the patient a chance for life. The following cases may perhaps suffice to illustrate these observations.

An old yet robust gentleman was seized by typhus, which assumed the inflammatory character: his wife, an extremely delicate woman, attending a great deal upon him, was in a few days infected with the fever; but in her it put on the congestive form. She was from the first completely overpowered; her face grew extremely pale, and had a dejected expression; her tongue was white, but moist; she felt her head uneasy and heavy, but her mind was not disordered; her pulse became weak and irregular; and her skin relaxed and cool. She principally complained of an extreme load and oppression about the epigastric and right hypochondriac regions, together with great loss of strength. On the bowels being freely opened with calomel and jalap, the stools appeared of the colour and consistence of tar. Finding that some relief was experienced, the purgative and alterative plan was continued for about four days, at which time ptyalism occurred; and it was curious to remark how the excitement emerged with the mercurial action, and how the indications of visceral congestion receded. Yet still there was a tendency to relapse in this case, which required to be counteracted by the regular exhibition of purgatives. In this lady the liver seemed to be the principal seat of

the congestion, and partly on this account, and her extreme delicacy, the cure was chiefly confided to aperients and mercury; though the warm bath was occasionally used, and a moderate portion of diffusible stimulus allowed, whenever she felt faint from the evacuations.

A spare and sedentary man was infected with typhus, shortly after his recovery from an inflammatory affection, for which he had been freely depleted. The fever stole upon him insidiously for two days, and then suddenly overwhelmed his strength. His head became heavy and confused, and his breathing slower and oppressed; the pulse was feeble and fluttering; and the skin cold on the extremities, though of the natural warmth about the trunk. The tongue was white and dry; the epigastric region somewhat distended; and the stomach very flatulent, and rather irritable. This patient being considerably debilitated when attacked with the fever, it was determined that blood-letting should be avoided, and that purgatives with alteratives, the warm bath, and blisters, should be tried. But although the bowels were very freely moved, and mercurials largely exhibited, the patient continued to grow worse daily, and at last sunk into a low muttering delirium, and had a black parched tongue, with tremulous hands. There was never any appearance of ptyalism, and he died on the seventh day of the disease. On examining the body, twenty hours after death, the ves-

sels of the brain and of the liver were found in a state of excessive congestion, though the rest of the viscera seemed to be in a natural state. In this instance, perhaps the result would have been different, if moderate venesection had been employed in the beginning; as I have since attended some of a similar nature, which terminated successfully where moderate bleeding was used in the first instance, and followed up by purgatives, calomel with opium, the warm bath, and blisters.

In the congestive typhus, especially in the worst cases, the moderate exhibition of diffusible stimulants is sometimes really necessary; not only to support the vis vitæ immediately under depletion, but also to contribute, after its employment, to rouse the heart and arteries, that the natural balance of the circulation may be finally restored. Indeed early depletion itself is to be considered as a stimulus, since it diminishes or removes those congestions which oppress the vital functions, and thereby tends to produce an uniform and general excitement. When sufficient evacuations have been made, certain degrees of venous congestion may remain partly from want of power in the heart and arteries; and the judicious administration of stimulants may then contribute to communicate that power, and thus in the end to equalize the circulation. Yet diffusible stimuli, without depletion, are rarely beneficial, nay generally dangerous, and on this account should not be

administered alone; and even when they are employed with or after depletion, their exhibition requires great care. It may be laid down as a general rule, that it is safer to give them with too sparing, than with too liberal a hand, for that case of fever must be desperate indeed, the cure of which is to be trusted to them singly. When the first great oppression of the most aggravated examples is overcome, they may either terminate in a complete resolution, or assume some other character. If the remedies recommended be efficient, they produce a condition widely different from the original one of congestion: in short, they establish a new action in the system, which may at once lead to convalescence, or be followed by a simple or an inflammatory excitement of the heart and arteries. Now, if stimulants be administered too freely during or after the employment of depletion, they may excite the heart and arteries too much, and either produce a simple fever, or one complicated with inflammation; the last of which is of the most frequent occurrence, probably because the parts which had before been preternaturally distended with venous congestion, are very readily roused into inflammation by a strong arterial re-action. In many cases of congestive fever there is a danger of one or other of the above states supervening; but if ptyalism be early produced, and purgatives continued with tolerable freedom for a few days after its appearance, they will generally be prevented, or at least rendered so moderate as to be almost always

remediable. When the simple or inflammatory forms of fever supervene the congestive, they must be, respectively, treated upon principles similar to those laid down for the simple and inflammatory typhus; excepting that evacuations of all kinds must be more sparingly employed, by reason of the reduced state of the system from previous depletion.

It has been formerly remarked, that although the preternatural accumulations of blood most frequently exist in the brain and liver, yet they are sometimes seated within the thorax; and whenever that is the case, the same plan of early and active depletion must be pursued in conjunction with calomel and opium, blisters, and the warm bath. When the stomach has been foul, I have sometimes seen spontaneous vomiting of considerable benefit, whether the head, chest, or liver was affected; yet I have never ventured to order emetics in the highly congestive typhus, though I shall afterwards adduce some facts, which would seem strongly to countenance their employment in certain instances.

If venesection be admissible in the last stage of the inflammatory typhus, it is certain destruction when the general relaxation has occurred in the congestive. At that period the loss only of a few ounces of blood will always prove speedily fatal. There is towards the close of most acute fevers of severity, some tendency to a change in the constitu-

tion of the fluids; and this may even be witnessed so early as the second day, in the most malignant cases of the congestive typhus. The blood becomes black and dissolved, so that when drawn it never coagulates, but continues a fluid gore in the vessel. Any approaches to this state of the blood, such as inky petechiæ, or dark oozings from the mouth and nostrils, with a weak, quick, thready pulse, always prove that the stage of collapse is at hand; and should make the professional attendant pause before he advances a step forward in the treatment. Depletion is then entirely out of the question, and the judicious use of diffusible stimuli, calomel and opium, together with blisters, and free ventilation, are the only means to which he can prudently resort at such a momentous crisis. Full and repeated doses of opium will sometimes save life, when the universal collapse seemed all but hopeless.

Sometimes in the last stage of the highly congestive typhus, an appearance of re-action takes place a few hours before death. The greater part of the surface becomes of a warm glow, and is covered with perspiration; the pulse rises, and frequently, on a slight pressure, feels full, bounding, and strong; but it is only a false semblance of fulness and strength, such as may be often observed towards the close of apoplexy; and therefore it should not deceive the practitioner, since the smallest bleeding would soon sink it entirely. Some have ingeniously contended

for the use of bleeding in the last stage of congestive fevers, on the plea, that it cannot be injurious, since there is a tendency in the case to be certainly mortal. In general the chances of recovery are then assuredly next to nothing, for if gangrene does not always exist, the visceral congestions still remain, and in combination, too, with an universal collapse. So far, therefore, from the general venesection being the only mean likely to do good under such circumstances, it is of all others the most inadmissible, since it is fitted wholly to extinguish whatever feeble glimmerings of hope might remain. And who, on the faintest expectation of saving life, would rashly venture upon a step which, if it failed, must be inevitably and almost immediately fatal? It is at all times most painful to our feelings, and humiliating to our pride, to be consulted in the last stage of highly acute diseases, where the proper measures have been neglected in the first: on such occasions, it is too often contrary to the nature of things to expect that any human means should be available, and certainly all daring efforts ought to be avoided.

The milder forms of the congestive typhus, where the viscera are not so much engorged, and some degree of re-action takes place in the beginning, require a similar, though a less powerful, plan than that just delivered. In them I have frequently used moderate venesection, at an early period, with great benefit; but in several cases have not found it neces-

sary. Large doses of calomel, with moderate ones of jalap and antimonial powder, so that they may act freely on the bowels, with the assistance of the tepid bath and blisters, will sometimes effect the cure; but the calomel should invariably be exhibited with boldness till the mouth become affected; and to accelerate that event, it should always be combined with opium, when evacuations have been carried far enough. In tolerably strong subjects, it will generally be better to use one moderate bleeding before the purgatives, alteratives, blisters, and the bath:—but in old or enervated habits, the lancet should either be laid aside, or employed very cautiously, for though one small bleeding may often be advantageous at the commencement, the operation can seldom be repeated with safety, and is most certainly prejudicial at an advanced period. Neither do aged nor very infirm persons bear purgatives by any means so well as the young and vigorous, and therefore in them they should not be so long or so vigorously exhibited.

After evacuations by bleeding or purging, an antimonial emetic often tends to produce a change of action in the whole circulation, and has a determinate effect on the extreme vessels, a general warmth and moisture being produced upon the skin, which before its employment had been in a very morbid and variable state. It will sometimes be requisite to administer cordials, either during or after the evacuations, in order to maintain the strength, and equalize

the circulation. Yet the precautions which have been so frequently repeated concerning them must not be forgotten here; for they ought never to be considered as an essential remedy in fever, but simply as a mean to obviate some of its consequences—to give a temporary tone to the heart and arteries, or to counteract the debilitating effects of necessary evacuations. Among the preparations in our pharmacopœias, one of the best diffusible stimulants is the carbonate of ammonia, which may frequently be prescribed with advantage in congestive fevers, when depletion has been premised; its excitement is neither excessive nor long continued, and, if given in moderate and repeated doses, it has considerable influence in determining to the surface.

It is more particularly within the first five days that the attacks of the milder congestive typhus may be so subdued, as to insure a favorable issue: but if that term be passed over, without the adoption of proper measures, little good, for the most part, can be done by any plan; though the bold exhibition of calomel, with small doses of opium, must then be the sheet anchor of our expectations. When the irregularities of the circulation proceed unmolested for some days, they are too frequently beyond the control of every medical agent, because they are then often connected with an irrecoverable relapse, or with actual lesion of structure. Still more effectually to inculcate these opinions, two cases

may be briefly detailed, the one remarkable for its unfavorable, and the other for its favorable termination.

A pale and delicate young woman continued to walk about for three days after she was infected with typhus, supposing that she merely labored under a common cold. Her friends were never in the least degree alarmed, until they observed a change in her whole manner, a dull, sleepy expression of the countenance, and some confusion of mind. It was with difficulty that she could be prevailed upon to confine herself entirely to bed, which at last, however, she was compelled to do from loss of strength, about the sixth day from her first indisposition. She had frequent, though indistinct attacks of chilness, and the integuments on the forehead and abdomen were hotter than natural, while in almost every other part they felt below the healthy standard. Her pulse was quick, small, and compressible, the tongue foul, the stomach flatulent, and the respiration much oppressed. Brisk purgatives were at first tried, with a blister over the breast, and the warm bath: these measures affording no relief, calomel was largely exhibited with a view to saturate the system, but this also completely failed; and as she became delirious with a tendency to coma, some blood was drawn from the arm, a few leeches applied to the temples and a large blister upon the nape of the neck. Every thing was ineffectual; she gradually sunk into a state of

insensibility, and expired on the eleventh day from the first feelings of indisposition. In this instance there was never any perfect developement of re-action, the extremities having continued cold throughout its duration. From dissection it appeared that the brain, liver, and spleen, were the organs chiefly engorged.

Another female, nearly of the same age and temperament as the former, was attacked by typhus, and complained of deep uneasiness in the head, giddiness, noise in the ears, and much oppression at the præcordia;—her pulse was weak and small, her breathing variable and anxious, her face very pale, and her skin rather cooler than natural, except on the breast and abdomen, where it was pungently hot. About eight ounces of blood were drawn from the arm, and six leeches applied to the temples; the bowels were well evacuated by calomel, antimony, and jalap; the warm bath was used, and a blister put to the region of the stomach. This plan soon converted the fever into one of simple excitement, but the stools continuing loaded with morbid bile, mercurials were daily administered until ptyalism appeared, when the secretions were restored to a natural state; and the patient was completely convalescent on the seventh day of the disease.

In the milder, as in the severe examples of the congestive typhus, the bowels should almost always

be kept in a soluble state, some days after ptyalism has been excited. If laxatives be neglected, even when there is an appearance of convalescence, a relapse is often the consequence, which, however, may almost always be overcome by procuring free motions. Nevertheless, whenever there are indications of any thing like a general collapse, be they ever so slight, evacuants of all sorts should be suspended; for they are frequently most pernicious in the last stage of fevers, and I believe that many cases are lost from practitioners persevering in the use of purgatives at such a period.

The cold affusions are quite inadmissible in every form of the congestive typhus, from the want or irregularity of febrile excitement. The warm bath, however, is an excellent remedy in the early stage: it not only tends to restore the functions of the skin, but to relieve the central parts from congestion, and is therefore among the best preparatory means for equalizing the temperature and circulation. If possible, it should always be promptly employed before or immediately after blood-letting; but it ought invariably to be followed up by frictions of the skin, and tepid drinks, both of which are serviceable by determining the blood outwards. In all congestive diseases, the deficiency or irregularity of heat on the surface is among the primary, and indeed the most important phenomena; for if the skin can be restored every where to its natural warmth, and if an univer-

sal perspiration can be at the same time excited, recovery will most frequently be the consequence. In the first stage of most violent attacks of febrile affections, there are strong indications of internal congestion, which may be often removed or mitigated by restoring a due proportion of caloric to the surface. Upon this principle is to be explained the repeated success of the method proposed by Mr. Balwin in the plague: for immediately after persons were perceived to be affected, and consequently while there was yet no arterial excitement, they were subjected to frictions by warm oil, in a close room, and over a brazier of hot coals, until free perspiration took place; and if a similar treatment were adopted, on the first signs of indisposition, in many of the fevers of this climate, it would probably be often highly advantageous.

For a considerable period, no cases of fever surprised me more than those of a congestive nature; some proving rapidly mortal, without any excitement whatever, and others slowly, with only partial degrees of it. But my surprise ended when I discovered, from morbid dissections, that visceral congestions were invariably the causes of death, and not direct debility, as I had been previously induced to suppose. From that time I ceased to place my reliance on diffusible stimulants, and gradually adopted the treatment above recommended, which I have found incomparably superior. Yet the treatment of

such affections still admits of great improvement, and it is to be hoped that it will hereafter receive the attention to which it is pre-eminently entitled. Before quitting the consideration of the congestive typhus, I must caution practitioners to be most minute in their inquiries, whenever consulted by patients, complaining of the first obscure indications of fever; because by a hasty or superficial view they may be led to give the most erroneous opinion, and to pursue the most injudicious practice. Some infected persons are from the beginning so listless and indifferent, that they may make little or no complaint even when alarming congestions exist; and, if neglected on the first day, may die unexpectedly on the next, from an overwhelming oppression of some of the vital organs. Others, again, appear pale and languid, and yet will hardly allow themselves to be indisposed; but if two or three days should elapse without the adoption of any decisive measures, they also may become alarmingly worse, and fall victims to the irregular form of congestive typhus. These remarks, however, are not to be confined to this disease alone, since they are nearly applicable to all contagious fevers; and hence sudden or unexpected deaths occur from the influence of the contagion of the plague, and hence, too, great and dangerous congestions from that of the scarlet fever and measles, as I have endeavoured to shew in a recent work. As the abstraction of caloric from the surface is so inseparably concerned in the pathology of those con-

gestive attacks which succeed contagion, it might naturally be supposed, that similar attacks would frequently arise from the influence of the weather and other causes; and indeed this is not a mere supposition, but an actual fact, since many congestive attacks actually arise from wet or exposure to a cold atmosphere, and others from the depressing passions, from certain disorders of the stomach, and the like. But at present only a few of these shall be concisely illustrated, by way of shewing still more strongly how similar effects may be produced by different causes.

CONGESTIVE DISEASES FROM COLD, ETC.

In speaking of the Egyptians, Herodotus says, that most of the disorders of mankind are to be attributed to the rapid changes of the seasons; and as human nature is always the same, and as the seasons still change as formerly, the remark is as suitable to the present as it was to the past time. By far the greater part of the congestive and inflammatory diseases in this country proceeds from the vicissitudes of the weather; and though I must steadily maintain, that there is such a disease as the *contagious* typhus, yet contagion is far too often recurred to in order to explain the origin of many fevers, which really arise from the changes of the weather. There is one common disease, which has been divided by nosologists into a great many, and which may be traced, in almost nine cases out of ten, to the agency of the surround-

ing air; but as I have given an outline of this disease, under the name of the common excitive fever, I shall defer its illustration for the present, and in the mean time allude to other affections.

There is a disease of congestion to which young children, especially those in arms, are very liable, and which principally affects the lungs. It generally comes on suddenly, after exposure to cold, with great oppression in the breathing, very pale face, small rapid pulse, a variable state of the skin, and extreme restlessness. Unless early relief be obtained, it is probable that the little patient will expire within thirty hours of the attack. On examining the body, the lungs will most frequently be found filled like a sponge with grumous blood, and the bronchial passages more or less obstructed with mucus. This disease so far resembles the congestive typhus, that it requires a similar method of cure. Immediately after the attack, a warm bath should be used, then blood taken from the arm or jugular vein, or from the integuments of the chest by leeches; a blister next applied to the sternum, and the bowels copiously opened: when these measures have been enforced, an antimonial emetic ought to be exhibited, and calomel afterwards repeatedly given in small doses. The early use of these expedients in quick succession, will often prove successful; but if they be wholly neglected, or tardily applied, such cases will almost uniformly prove fatal. Young children,

especially those in arms, do not bear cold well, and the present mode of clothing them can hardly be enough deprecated: in the winter or spring their linen or cotton dresses afford but little protection to the surface, which is therefore soon chilled, and hence succeed many of those visceral congestions and inflammations to which they so often fall untimely victims.

Attacks of spasmodic asthma are often induced by the abstraction of heat from the surface, through a medium colder than the body, or they are also often dependent upon changes in the density of the atmosphere. When heat is largely withdrawn from the surface, the small vessels of the skin contract, and the blood retires into the larger and deeper seated veins, by which it is transmitted superabundantly to the right side of the heart; and an oppression succeeding to this preternatural fulness, the venous blood is impeded in its return from the internal organs, so that the weakest suffers the main shock. With respect to the changes in the density of the atmosphere, it has not yet attracted sufficient attention, though it is obviously a subject of great importance in pathology; for every remarkable change in the density of the air must produce a correspondent contraction or expansion in the blood-vessels, and hence the cause why some persons, previously in a weak state, are under the influence of the air, almost like barometers. In every case of spasmodic asthma,

there are the strongest proofs of an oppressed heart, and of venous congestion of the lungs, at the first attack: and nature often relieves this oppression and this congestion by a copious expectoration from the bronchia, by a free perspiration, by a diarrhœa, or by a plentiful flow of urine. Hence in the removal of such attacks, emetics and the balsam of copaiva, the warm bath and sudorifics, and those medicines which move the bowels and act upon the kidneys are among the best remedies; but in the most formidable instances, it is generally requisite to abstract blood, and to blister the chest, though on such occasions the mouth should be made as speedily sore as possible by mercury. Emetics, copaiva, and the inhalations of certain vapours are the only expectorants with which I am acquainted; and whenever there is a dangerous accumulation of phlegm in the bronchia it will be perfectly fallacious to trust to any other medicines which speciously pass under that name.

Some persons, and particularly those advanced in life, are very subject to sudden congestions of the liver, and of other abdominal organs, from the influence of cold air upon the skin. These attacks are ushered in by chilness, oppression of the præcordia, flatulence of the stomach, and nausea, retching or vomiting; the pulse commonly becomes much oppressed, and there is at length considerable pain in some part of the belly, with great prostration of

strength. If evacuations be omitted, the patients generally sink with rapidity; whereas they usually recover, if blood be abstracted at the onset, and purgatives, large doses of calomel, blisters, and the warm bath be afterwards expeditiously applied. In such cases, the blood first taken away never exhibits the buffy coat, but after the operation a general excitement of the heart and arteries often occurs, and if any should then be drawn it is often covered with the inflammatory crust. Indeed whenever a high excitement succeeds to the stage of oppression, it will generally be necessary to bleed again; as the part where the venous congestion originally existed will then, for the most part, become actively inflamed.

What is called the febrile nettle-rash is in general a very mild disease, which often arises in peculiar habits, from something taken into the stomach, such as certain fruits or shell fish; but occasionally it assumes an alarming character, and has a first stage of marked oppression connected with congestions of some of the viscera. Sometimes this stage gives way, and is followed by one of excitement with evident signs of internal inflammation, commonly of the liver, requiring venesection, purgatives, and similar remedies. Again, in other instances, the congestions from the first are so excessive as entirely to prevent the emergence of the excitement, and there is then all the danger of the highly congestive typhus; in three cases of this kind which fell under my obser-

vation, the patients had the most distinct symptoms of apoplexy, and the extremities were below the natural temperature. It is remarkable, that in two of them, antimonial emetics gave almost immediate and complete relief, by removing a great deal of crude matter from the stomach, and inducing a change of action in the whole circulation; and even in the third, they were of much benefit, in combination with bleeding, purgatives, calomel, blisters, and the warm bath. Several highly eminent authors have expressed their unqualified disapprobation of emetics in apoplexy; but nevertheless I have often seen them most decidedly serviceable in that disorder, when it was connected with an overloaded or disordered stomach, as was the case in the three examples mentioned above. These observations, however, are not made entirely to shew the efficacy of emetics, under such peculiar modifications of apoplexy; but are also intended to suggest, whether they might not be usefully administered in the highly congestive typhus, and similar complaints. In the commencement of every modification of infectious fever, particularly in those of a congestive character, the stomach is always affected, to say nothing of the liver; now as we know in the nettle-rash and other diseases, that a deranged state of that organ can powerfully oppress the heart, disorder the functions of the skin, and lead to great congestions, why may it not be intimately connected with the production of the phenomena of highly congestive fevers proceeding from conta-

gion? If this be really the case, is it not very probable, from the facts already adduced, that early emetics would be beneficial in such affections? But these parts of pathology and practice must be left for others to investigate hereafter; for being highly important, they require to be settled, not by conjecture or analogical reasonings, but by observation and experience.

APOPLEXY.

Frequent allusions have been made to apoplexy in these pages, but it now remains to shew when that disease resembles, and when it differs from the highly congestive typhus. There are two different states of the circulation connected with apoplexy, which have generally been confounded with each other, by those who have written on the subject. Apoplexy is either a disease of venous congestion, or of arterial excitement: the venous congestion, or the arterial excitement, may be sudden and excessive, without much previous disorder, which constitutes the acute apoplexy; or it may be slowly produced, and continue months, or even years, before the decided attack occurs, which constitutes the chronic apoplexy. Intending to illustrate each of these varieties very minutely in a subsequent work, I shall be as brief as possible with respect to them here; especially as it is the acute apoplexy only which can be said to have a strict analogy to certain forms of typhus.

The acute congestive apoplexy may arise, in spare and lax as well as in gross and plethoric habits, from cold applied to the surface, from too full a meal of indigestible food, from hepatic obstruction, or from some pernicious ingredient having been swallowed. With the other pathognomonic symptoms of apoplexy, it is most frequently attended with a pale face, a cold or cool skin, an exceedingly oppressed pulse, great loss of muscular power, and, sometimes, with strong convulsions. Occasionally I have seen it follow immersion in the cold bath, in old or debilitated subjects; and I have also reason to believe, that those persons are attacked with this disease, who suddenly sink in the act of swimming, from what is usually termed the cramp. Several instances have come under my care, which proceeded from irregularities of diet, and some of them occurred in children, who had been allowed to eat too much fruit with the rind or husks. Having known it sometimes succeed large and repeated doses of opium, I feel it my duty to warn practitioners against the incautious exhibition of this drug; particularly as it is now, perhaps, more frequently and longer prescribed than is always expedient. Probably many poisonous substances prove destructive by the congestions which they occasion, rather than by directly changing the constitution of the fluids. When this disease arises from a disordered condition of the stomach, an emetic should be the remedy first prescribed; but if the symptoms be urgent, the measures recommended in

the highly congestive typhus, should also be adopted without the least delay. When it proceeds from the operation of cold, the warm bath and frictions will be specially indicated; although prompt evacuations, with blisters and large doses of calomel, will commonly be requisite at the same time. And when it is dependent on hepatic obstruction, mercurials and opium must be boldly administered, after venesection. It must, however, be recollected, that in the venous congestive apoplexy, as in the highly congestive typhus, too much blood should not be drawn at one time, nor the operation often repeated. Indeed in both cases, the circulation will always be best relieved by moderate bleedings, whereas very copious ones generally destroy all chance of recovery. But these observations, in regard to venesection, must not be strictly extended to the acute apoplexy, arising from increased arterial action, which will be found in some respects similar to the inflammatory typhus.

The acute apoplexy, which is connected with an augmented force of the arteries, may be induced, in predisposed habits, by any cause which impels the blood powerfully towards the brain; such as strong mental emotions, stimulating drink or diet, insolation, excessive heat or exercise, intense study, and the like. In this species the pulse is full and strong, the carotid and temporal arteries preternaturally distended, the face commonly turgid, and the eyes blood-

shot: immediately before an attack, the subjects of it are apt to complain of a tightness about the throat, and almost always have pain as well as deep throbbing in the head, with a feeling of great fulness, and other uneasy sensations there. When, however, it has actually taken place, the arterial excitement is generally very short, and is followed by signs of universal collapse. Yet if this modification be promptly and judiciously treated, in the commencement, life may be often saved. Blood should almost always be taken from the arm and the temporal artery at the same time, and much more may be drawn than in the congestive apoplexy. The bowels should be immediately moved by large stimulating enemata, and fully evacuated afterwards by copious doses of calomel, jalap, and the sulphate of magnesia. The common practice of applying blisters to the shaved scalp is perhaps a questionable one: but I have frequently seen those remedies essentially serviceable when applied over the region of the stomach, or liver; the last of which organs is sometimes affected in this as well as in the preceding species. Whenever the gullet is palsied in an attack of apoplexy, and the stools are passed involuntarily, it will commonly terminate fatally; but while patients can swallow, and the sphincter ani requires to be forced by powerful cathartics, the case should never be given up as hopeless, how desperate soever the general circumstances may appear. In both the acute species of apoplexy, when death occurs, the vessels

of the brain will always be found turgid, and occasionally some of them ruptured, while in general there will be a preternatural quantity of serum in the ventricles.

When the practitioner succeeds in repelling the first shock of the above forms of apoplexy, a short mercurial course should be prescribed: for it tends in the first place to equalize the circulation, and in the second to prevent the recurrence of similar attacks. Moreover, if any paralytic affection should remain, it will be the most likely mean to lessen or remove it: and in those instances where the tongue is affected, ptyalism will be found particularly serviceable; for alteratives may be made to act as a sort of blister upon that part, by the influence of which its functions are sometimes entirely restored.

Both the chronic species of apoplexy resemble those of the acute, in their pathological peculiarities; except that the venous congestions in the one, and the arterial determinations in the other, form gradually, and proceed a long time, before the occurrence of any decided attack. The congestion generally occurs in pale, weak sedentary subjects; and after death, more serum than natural is found in the ventricles, commonly with appearances of turgidity in the vessels of the brain. The other chronic species mostly takes place in men of active or dissipated habits; and is often finally connected with organic disease

in the brain itself, or in the meninges, and, like the forementioned, often slowly occasions serous effusions into the ventricles; so that there is really some foundation for what has been termed serous apoplexies, which, however, require a depletory and alterative treatment. The progress of both the chronic species may be traced by a variety of symptoms; and as their history is a desideratum in physic I shall afterwards attempt it by the minute detail of many cases. From the foregoing observations it must have been perceived, that the acute forms of apoplexy have the closest alliance to fever; since they either depend upon venous congestion or arterial excitement, and in fact they ought to be arranged and considered as varieties of febrile disease. But in the chronic forms of apoplexy, this alliance to fever is not so obvious at first sight though the slow disorders of the sanguiferous system out of which they arise are either of a congestive or of an excitive nature. The various modifications of mania, however, are attended with morbid states of the circulation analogous in many respects to those which exist in apoplexy; and the consideration of them may, therefore, mutually tend perhaps to elucidate the nature and cure of both these important affections.

MANIA.

Mania is either a primary or a secondary disease. It is primary when the brain is the organ first and decidedly affected; it is secondary when the brain

is affected from some distant disorder, as of the digestive organs. Like apoplexy, too, it is either acute or chronic, and also marked by venous congestion or by arterial excitement. In several cases, I have seen mania ushered in by the strongest signs of cerebral congestion, while the tone of the heart was extremely oppressed, the face very pale, the pupils dilated, the hepatic secretions disordered, and the skin cool and relaxed. Whereas in other instances, I have observed mania to commence under what we term an excessive determination of blood in the arteries, with swollen, reddish face, ferretty eyes, full bounding pulse, and preternatural heat of the surface, but especially of the forehead and hairy scalp. In the congestive variety, patients often complain a little before the attack of a load or confusion in the head, with an oppressed or heavy feeling at the heart or epigastrium; and in the excitive variety, patients often complain of a pulsating pain or fulness in the head, while the action of the heart is increased both in force and frequency, without any sense of weight or oppression there. These two varieties are evidently of the acute kind, and indeed sometimes pass into each other; the symptoms of congestion appearing first, and those of excitement afterwards, as is observable in many fevers. In one gentleman in particular, who was thrice a patient of mine within five years for separate attacks, the mania was always preceded by the most manifest indications of venous congestion in the brain; for the oppression was so great at each

attack as to border upon apoplexy, while there was a small impeded pulse, a cool skin and a pallid face with glairy eyes. But as soon as the pressure of the venous congestion was removed by the use of the lancet and purgatives with the warm bath, an excessive determination of blood took place to the head, attended with fever; and though the blood drawn when the symptoms of venous congestion were present never exhibited the buffy coat, yet it generally did so when abstracted after the arterial excitement had occurred. In this case, the functions of the liver were always disturbed with those of the brain, and I have seen others in which the former organ was still more deeply implicated: but though an affection of the liver be common it is not an invariable and a necessary concomitant of either of these varieties of mania; and the affection of the liver as often follows as precedes that of the brain, so that in one instance it shall appear to be an effect, and in another a cause of the morbid conditions on which insanity depends. When an affection of the liver, or indeed of any other remote organ operates on the brain so as to produce ultimate madness, this operation is not direct but indirect; for the affection of the remote organ often proves an irritant to the heart, the increased action of which excites the mania, by propelling the blood too powerfully towards the brain. Or the return of venous blood being interrupted through the remote organ, as may happen in cases of congestion of the liver, the circulation of the brain is thereby mechani-

cally affected, and madness succeeds; and the common observation of every day may convince any one how much an obstruction in the liver influences the brain, since those in whom it exists are seldom free from pain, or some other uneasiness in the head.

This view of mania seems to presuppose that there must be some antecedent disposition in the brain, else why should an affection of the liver lead to madness in some persons and not in others? The more we enquire into the history and pathology of diseases, the more we shall be convinced, that latent and local predispositions determine the seat and character of the symptoms; for though those predispositions may exist under ordinary states without producing disturbance, yet when the system receives any shock, the effects of that shock will be concentrated in the weakest part. It is thus, in numerous individuals exposed to the same exciting cause, that in one the brain shall be affected, in another the lungs, and in a third the stomach, and so forth; because before the occurrence of the palpable disorder, these organs had severally been predisposed, and they only became diseased from the circulation of the blood having been disturbed from some increase or decrease in the action of the heart, or from some mechanical impediment to the free transmission of blood. What we call increased determinations of blood to particular parts are in general merely obstructions in the smaller vessels, by reason of which the blood cannot be so

readily returned through the veins; so that the currents of blood transmitted by the heart through the larger arteries, continue to accumulate in those arteries, which accordingly become more distended than others, but the action of which is never more frequent; and indeed observation on the pulse in various places at the same moment will convince any one that the action, or rather that the number of contractions and expansions, is the same in all the arteries, our common language on the subject being figurative and incorrect. Local determinations of blood, as above explained, are very conspicuous in many diseases, but in none more so than in mania; and where an obstruction in the capillaries of the brain exists simultaneously with an increased action of the heart, both the carotid and temporal arteries are often excessively distended with blood.

The acute attacks of mania, congestive as well as excitive, are often so formidable, that there is immediate danger from the pressure of the venous congestion or of the arterial excitement; so that they both require, at their commencement, a treatment similar to that of the congestive or excitive apoplexy, according to the character of the symptoms. These attacks are sometimes so sudden, as to require the greatest promptitude to save the life of the patient. Some years ago, I attended a gentleman who was labouring under hepatic disease, with some threatenings of insanity; and he was so suddenly seized with an ap-

parent apoplexy of a violent kind, that he must have shortly expired, if the family surgeon and myself had not been present. He was walking backwards and forwards in the room in an agitated manner, as he had done for some days previously, when all at once the attack came on, and he fell down in a profound apoplexy. Without the loss of a moment of time, we plunged the lancet into the main branch of the temporal artery, and by abstracting thirty ounces of blood seemingly prevented his death. But soon after this period, the madness was manifestly developed, and it required a regular course of medicine before it was perfectly cured.

Sudden or excessive abstractions of heat from the skin, the depressing passions, sedentary employments, and indigestible food, are causes which often lead to the congestive variety of acute mania; while the excitive variety is often produced by exposures to a high temperature, by strong emotions of the mind, by stimulating drinks, and by intemperance in diet. It has been said, as a bitter national reproach, that the one half of the people of Great Britain is scrofulous, and the other half mad: and there is perhaps a much nearer affinity between these two diseases than writers on the subject have generally seemed aware; at least in many families where madness prevails hereditarily, there scrofula also prevails, and has prevailed. Both the causes of scrofula and madness are frequently to be found in the vicissitudes of our cli-

mate, and in the full or irregular diet which we adopt, together with the use of wine and spirits. It is exceedingly to be regretted, that the mode of living amongst the higher orders, who influence the habits of the middle and lower, is daily becoming more complicated; and this is the case not only with regard to diets, but also to drinks, for both the dishes and wines are now more numerous and varied than formerly. We are a high fed and pampered people in regard to our animal appetites, and until we become temperate we must be content to bear the penalties of the violated simplicity of nature. It has always appeared to me, that a great deal more of animal food is eaten than necessary in this country; and if we were more moderate in the use of flesh meats, we should probably have better health bodily and mentally. Next to the abuse of animal food is that of wine among the higher, and of spirits among the middle and lower classes of society; for numerous acute and chronic attacks of the brain, and of other vital organs, are distinctly attributable to such unnatural stimulants incessantly increasing the action of the heart: so that the blood is circulated more rapidly than was designed in the constitution of our nature, and the weakest organs are consequently liable to become diseased. If madness be hereditary in any family, it is often induced by the daily use of wine or spirits; and indeed eating largely of animal food has a similar effect, as I have sometimes seen strikingly exemplified. Man is not only more com-

plicated in his animal enjoyments as he advances in civilization, but he is also more liable to mental agitations, when actively engaged in the world; and it is perhaps owing to the operation of these two causes, together with the variableness of our atmosphere, that madness is so common in Great Britain. But it is time to pass on to the description of the more chronic forms of mania, which are frequently excited by such causes as have just been enumerated.

The chronic forms of mania steal on insidiously for a long time, before the subjects of them can be pronounced positively insane. The one which arises from a strictly congestive state of the brain, is preceded by paleness of the face and skin, by watchfulness and restlessness, by some feeling of uneasiness in the head, by an occasional load at the region of the heart, and by more or less derangement in the hepatic secretions. The pulse is almost always weak or oppressed during the day, and the surface often damp with a cold perspiration; but the pulse frequently becomes fuller and quicker towards the evening, from the accession of a short and imperfect excitement, in which the skin is generally hot in some places and cool in others. Dejection of the spirits is usually the first symptom which indicates the approaching disturbance of mind; and next some defect of memory appears, with dulness or confusion of the intellect, a marked change in the expression of the countenance, and a tendency to deviate from

accustomed habits and pursuits. When these symptoms have continued a certain period, the patient has frequently some threatenings of apoplexy or epilepsy, and, if the effects of these should not prove fatal, at length he becomes clearly deranged; but about this time, especially if depletion be used, the appearances of general oppression subside, and the pulse grows full and strong, with other evidences of excitement, especially about the brain. Not long since, I was consulted for a gentleman who had recently sustained an attack of apoplexy, and who did not apparently throw off its consequences so readily as his friends had expected. He conversed with great rapidity upon a variety of subjects, and though he said nothing that was strictly incorrect on any, yet his general manner indicated some affection of the brain. On inquiring particularly into the history of his case, I found that for more than three years before the attack of apoplexy, he had been subject to swimming in the head, and an uneasy sensation under the ribs of the right side whenever he was on horseback. These symptoms alone led me to suspect, that some insidious mischief had long existed in the brain and liver; and I became confirmed in this opinion, by ascertaining, that he gradually became pale and shrunk soon after the forementioned time, lost his spirits, and had been subject to sudden, lancinating pains in the joints. A few days from the commencement of my attendance, a violent attack of mania supervened; but in about two months after-

wards a favorable change took place under an active treatment, and at the time of my composing this sheet, he seemed to be convalescent. Other cases of a similar nature might be adduced to shew how secret and concealed the approaches of insanity may be, before the developement of the decided attack; and indeed this is so much the case, that we should never treat with indifference any example which wears the least character of hypochondriasis, an affection which frequently precedes madness.

The other chronic form of mania, which is intimately connected with arterial excitement, is generally preceded by watchfulness or disturbed sleeps, by uneasiness in the head, by quickness and firmness of the pulse, by whiteness of the tongue, and by a slight increase of heat at nights. As the morbid train of phenomena advances, the patient becomes more irritable, and often extremely suspicious. A sensible change takes place in his demeanour, and even in his moral character, so that compared with what he formerly was he appears like a different individual. Sudden and uncommon attachments or aversions are now often formed, and expensive or parsimonious habits pursued, inconsistent with the former conduct, or with the present situation of the patient. Unfounded fears or strange fancies arise, and what pleases at one time offends at another; and during the progress of these symptoms, the memory may be observed to grow more defective and confused. In

this, as in the other chronic form of mania, the liver is very liable to be diseased.* But on many occasions it is difficult to say whether the liver is primarily or secondarily affected; but in chronic diseases of the brain in general, I am disposed to believe, from my own observations, that the liver is more often secondarily affected, than many modern authors seem inclined to believe. In the course of my experience I have seen several cases of chronic diseases of the brain originate insidiously from blows or other injuries applied to the head; and in the progress of most of these, the functions of the liver became more or less vitiated, though they had been natural previously to the occurrence of the accident. Chronic affections of the brain are often so indistinctly denoted for a considerable period, that we not unfrequently mistake merely sympathetic disorders of the digestive organs for them; and in proof of this I have seen some remarkable dissections where prior to death the stomach had been deemed the sole seat of the disease, and yet that organ was sound, and the brain exhibited much derangement. Even slight injuries inflicted on the scalps of adults by falls, blows, or the like, when neglected at first,

* In the London Medical Repository, Dr. Burrows of London published an excellent paper on Insanity, about the same time that the first edition of this work appeared; and it gave me much pleasure to find, that my opinions, respecting the morbid conditions of the liver in this disease, so strongly coincided with those of that enlightened pathologist and practitioner.

often lead to chronic inflammation of the dura or pia mater, and sometimes even to madness, as I have myself witnessed; and such accidents, therefore, should always be attended to at their occurrence, and even for some time afterwards, for moderate depletion, followed by an antiphlogistic regimen, may prevent a great deal of mischief. An old lady was once placed under my care for insanity, but she was so speedily removed by her friends to an asylum, that I had not time to investigate her case: and I was credibly informed, that when she died soon afterwards a fracture was accidentally discovered in the skull, which had till then, unfortunately, escaped observation. Such cases should teach us the utmost caution in our inquiries into the causes and symptoms of insanity: and it certainly does appear to me, that injuries of the head more frequently excite the chronic forms of this disease than is suspected; but this is more especially so in those cases which depend upon slow arterial excitement, and the history of which I have imperfectly sketched. In cases of this nature, there are sometimes also such unequivocal signs of apoplexy, near the time of the attack of madness, that copious depletion is required; but if such cases be traced backward for some time, a precursory train of symptoms may always be discovered which had led both to the apoplexy and to the madness.

It will have been perceived, that I consider insanity as the effect of some disorder in the circulation,

whether produced by agencies of a corporeal or mental nature. It might be shewn by many facts, that the brain is the principal organ through which the mind performs its operation; and it does not, as many have supposed, necessarily involve the doctrine of materialism to affirm, that certain disorders or derangements in the state of that organ are capable of disturbing its operations. If the most skilful musician in the world were placed before an unstrung or broken instrument, he could not produce the harmony which he was wont when that instrument had been in its proper and perfect state, nay on the contrary the sounds would be discordant; and yet it would be wrong to conclude from the effect produced, that the powers of the musician were really impaired, since they only appeared to be so, from the imperfection of the instrument. Now what the instrument is to the musician, the brain may be and probably is to the mind:—as the one must be proper and perfect to enable the musician to display his powers, so must the other be, in like manner, to enable the mind to display its powers; and as a disturbance in the condition or structure of the instrument will produce discord in music, so a disturbance in the condition or structure of the brain will produce insanity, the discord of the mind. The belief in the immateriality and even in the immortality of the mind seems to be a first principle of our nature, since it prevails every where, as well in a savage as in a civilized state; and surely all the analogies of

creation, to say nothing of religion in this place, tend to cherish a sentiment so pleasing and so sublime. Nothing perishes which has once been created, for even what appears to be the destruction of matter is only a change of its form; and as it is impossible to conceive that our mental operations can be resolved into any material substances, is it not irrational to imagine, that they are destructible, when the very dust upon which we tread seems to be everlasting? Neither, in my opinion, is it philosophical to suppose, that the mind itself, abstractedly speaking, can be diseased, for that would be to admit, that it was liable to the changes and decay of our material structure; and when the operations of mind are disturbed or deranged it is more agreeable to common sense to conclude, that the disturbance or derangement is the consequence of bodily disease. Indeed this view of the subject is almost confirmed by observing what actually takes place before the decided attack of madness; for no case of this disease has ever fallen under my observation in which there were not the most distinct evidences of some disease in the brain, to which the madness might be referred as a consequent occurrence. It were needless to object to this doctrine because madness is often produced by mental emotions. Those emotions never act directly, but indirectly by having a most powerful influence on the action of the heart; and if we reflect for a moment, that the action of the heart in its turn has a great influence over the circulation of the

brain, we shall be at no loss to account for madness, on the principles here maintained.

If these premises be correct, to restore the organ, through which the mind chiefly operates, to a sound condition will be the best way to remove madness. It would amount to little to contend, that it will be of no use to restore the natural state of the brain, while the mind itself may continue to influence it morbidly; for we might as well say, that the effect produced on the brain by a blow should not be removed, because it may be re-produced by the repetition of the blow. It often happens after such an injury, that the disease induced remains for some time; we evidently perceive, then, that as the injury is not renewed, it is simply the continuance of the effect: and so it may be in many cases, when the disorder of the brain is produced through the medium of the mind. For the effect remaining, in the latter instance, does not shew, any more than in the former, that the state of the mind continues to maintain the morbid action of the brain which it originally induced: and granting that it should, it would still be of considerable advantage to counteract its influence by proper remedies, lest it might derange the structure of the brain, and thus not only render the madness permanent, but shorten life. Indeed, in every case of mania, it will be equally necessary to remove, as far as possibly can be done,

every thing from the mind, as from the body, which has produced, or is likely to produce, an injurious effect.

The preceding, it is readily allowed, is a very imperfect and faint outline of the pathology of the various modifications of madness ; and it should not have been drawn here, but for the purpose of exhibiting a method of treatment which, if it should prove as successful in the hands of others as it has been in mine, will contribute to lessen the duration and fatality of this awful disease. But before proceeding further it will be necessary to state, that I consider madness generally remediable in its commencement, and most frequently incurable when it has existed for some time. The special grounds upon which this opinion is founded are briefly these :—in the commencement, madness is maintained by disordered action only ; but when it has existed for some time, that disordered action has mostly produced either such a change of structure, or morbid state of the vessels, in the brain, as does not usually admit of removal. The indications of disordered action were clear and indisputable in the beginning of every instance of mania, which has fallen under my care ; and when I have been able to remove that action, sanity of mind has generally succeeded. It is, however, but candid to confess, that I have traced the history of some cases, in which, the first signs of disordered action disappearing, the circulation *seemed*

to be restored to a natural condition; and yet there was no abatement of the mental malady. Still such cases do not overturn the opinion here advanced; for even in them it is most probable, that the primary disorder in the circulation had effected some morbid change in the brain, by which the madness was confirmed. In this most complicated and mysterious organ, very slight changes would be equivalent to such an effect; although they in general left the bodily health unimpaired. In three examples of this nature, I found after death some small ossifications in the meninges, with more serum in the ventricles than common; and I have never seen the brain of any patient, who had been insane, perfectly natural on minute examination. Besides, in long continued cases of madness, it does not follow that because the blood appears to flow naturally along the radial and other external arteries, every other part of the circulation must be in a healthy state. Many large tumours form on the surface of the body without ever affecting the pulse; and if such irregularities can thus occur externally, why may not certain derangements exist internally, without being indicated by the pulse? Nay, we do know that the heart itself, the very centre of circulation, may suffer certain kinds and degrees of morbid changes without influencing the pulse; and should we wonder if something similar take place with regard to the brain? Can we be surprised, after the first congestions or determinations have subsided in mania, that they should

leave effects sufficient to prolong the disease, even when the pulse at the wrist and elsewhere seems to beat naturally? In the extensive circle in which the blood revolves, many morbid deviations may be induced, of which the pulse gives no information whatever.

In those cases where madness comes on suddenly, and is connected with great fulness in the vessels of the head, the immediate pressure must be promptly relieved, at the very onset, by free bleeding and purging; otherwise the patients will be either in danger of dying, from venous congestion or arterial excitement of the brain, or they will be extremely liable to permanent alienation of mind. In the simple apoplexy, when you can succeed in overcoming the first powerful impulse, for the most part all the urgent symptoms soon disappear, but it is not so with madness; for when you have reduced the force of the cerebral congestions or determinations, it will commonly be found, that they have produced or are connected with an affection of the brain, which is still to be erased before convalescence can be accomplished. On this account, it will generally be necessary to persevere for some time in the occasional use of local blood-letting, purging, and blistering, combined with a regular course of mercurials: but after the pressure of the congestion or excitement has been evidently mitigated to a considerable extent, depletion by the lancet should be cautiously pursued;

since if it be carried too far it occasions a nervous irritation which acts powerfully on the heart, and which may protract or confirm the disease, and finally exhaust the powers of the patient. In the first two weeks of the attack, I have usually bled both from the arm and the temporal artery, until the fulness of the vessels of the brain was relieved, and the action of the heart restored to a more natural state; yet at the same time the bowels were evacuated by calomel, jalap, and the sulphate of magnesia, the calomel having been given in full doses to procure its alterative as well as its purgative operation. After that period, it has been my usual practice to draw blood by leeches or by cupping about twice a week, to order a saline purgative about every second morning, and to give calomel daily in such doses as to insure a moderate but constant ptyalism for some time. When the last mentioned effect has been procured it has been customary with me to apply blisters occasionally to the shaved scalp; and in some instances, they appeared very beneficial, where they did not act as irritants to the heart. It is worthy of remark, that at least two-thirds of the cases of madness which I have attended, *in a recent state*, recovered within the first three or four months, under this treatment; though hardly any of the patients shewed signs of convalescence until the mouth had been affected for some weeks by the mercury, and until some degree of emaciation took place. It is occasionally a very difficult matter to induce

ptyalism in mania, and whenever this is the case it is an indication that evacuations are required, which always tend to render the system pervious to the influence of mercury. When ptyalism, however, is once induced in mania, it may be easily kept up by moderate doses of calomel or of the blue pill, or by mild mercurial frictions; and the last mentioned may often be used with good effect where the two former preparations disagree with the stomach or bowels. After sufficient evacuations had been premised, I have often combined small doses of opium with the alteratives; and wherever there was much nervous irritation, this combination always appeared more or less beneficial.

On the first occurrence of those cases of mania, where clear evidences of constitutional excitement existed, I have seen the shock of a cold shower-bath sometimes useful; but much harm may be done by persevering in such a measure when the tone of the heart and arteries has been subdued, for it then may increase or occasion fulness in the vessels of the brain, confirm the insanity, or induce an attack of apoplexy, of palsy, or of epilepsy. When, however, there is at any time an excessive determination of blood to the brain, or when the maniacal paroxysms become severe, cold stupes may generally be applied with great advantage over the whole head, secured in the form of a night-cap, that they may remain on; and under such a state of things, the head should

always be raised very high, in order to retard the flow of blood by the arteries towards the head, and to accelerate its return by the veins, a circumstance which is highly important in many severe affections of the cerebrum. In those cases which are strictly congestive, the cold affusions cannot be safely employed; but the warm shower or slipper bath may be beneficial, in combination with depletion, by contributing to allay irritation, and to equalize the circulation. Where the mercurial course, with the means before mentioned, has failed to remove all the symptoms of insanity, I have generally persevered in the use of the warm or cold shower bath, with tolerably active purgatives; and when this treatment has been regularly pursued for some time, it has rarely disappointed my expectations, where the disease had not been of long standing before the previous application of the depletory and alterative measures.

The more chronic cases of mania, which steal on insidiously in the way before described, may be most frequently cured, if early encountered by bleeding, purging, and mercurials; but if they be allowed to proceed until fully developed, they will almost always prove less manageable than the acute forms. Sudden irregularities in the circulation arrest our attention at once, and may often be overcome without leaving any traces but what are removable by judicious means; but slow congestions or excitements sometimes make deep and indelible impres-

sions, before any serious mischief has been suspected. When, however, the insidious modifications of mania have been neglected until the decided attack has taken place, the same plan of treatment must be pursued as in the more acute varieties, with this exception, that the general depletion should not be carried so far; and even under circumstances apparently so unfavorable, I have known the steady perseverance in this treatment effect a cure, even when the precursory symptoms had been stealing on for two or three years. Upon the whole, therefore, I could wish, that the agents which I have recommended combinedly or successively in mania, were fairly and extensively put to the test in the practice of others; for I must again repeat, that if they should prove as successful in their hands as they have done in mine, they will contribute to lessen the duration and fatality of this awful disease. There is an efficacy, it appears to me, in the conjoint use of bleeding, purging, and mercurials, which has not yet been fully estimated in the early stages of mania: and as where these measures fail at that period, the subsequent employment of the shower bath and purgatives will yet succeed, an encouragement is surely held out to give this plan an impartial trial.

The few cases of melancholia which I have seen were connected with congestion of the brain and liver; and in them the tepid bath and purgatives, with calomel and opium, proved highly efficacious:

but it should be remembered, that whenever the brain labours under an accumulation of blood either in the rise or progress of mania or melancholia, the lancet must be promptly employed; for when this measure is neglected, apoplexy or epilepsy often supervenes, or the structure of the brain is so much injured as to render the disease irremediable. When convalescence from mania has once taken place, the diet in general ought to be extremely abstemious afterwards, even during the whole period of life; for I have seen several relapses which were evidently occasioned by eating too much food; and this is a point which requires the more attention, as the appetite is often keen on the subsidence of mania.

But those who have attended much to the phenomena of an existing mania, must have observed that though depletion and the antiphlogistic regimen may be indispensable in the beginning, yet patients require to have regular supplies of light nourishing food, during the progress of the disease; if they be neglected in this respect, they in general become highly irritable, and the whole circulation is thrown into great disorder. That both the nervous and vascular systems may be tranquillized as much as possible, no more restraints should be used than are absolutely necessary for the personal safety of the lunatic. If any objects are fitted to excite our commiseration, it must surely be those who are insane; and certainly the first and last impulse of nature is to

pity and protect them. The rigid mode of coercion which has been so much adopted towards those unfortunate persons, could only have originated in ignorance or interest, for there can be no question that the gentler the moral treatment can be made, the greater is the chance of recovery. The scenes which have been lately brought to light in those places called asylums, are most repulsive to humanity; and as they have awakened the sympathy of the whole nation, we cannot doubt that a thorough reformation will be the consequence; and that the benevolent system, which has reflected, from the Retreat,* so mild a lustre upon the Society of Friends, will hereafter be universally adopted.

Between the local and constitutional states of the circulation in *recent*, and in *long continued* cases of madness, there is a wide difference; and it is in its earliest stages only while connected with those conditions of the vascular system before described, and not after it has become an habitual disease, that I consider it somewhat analogous to certain modifications of fever. If medical treatment be generally inefficient in *established* mania, it is surely unfair to conclude that it is likewise so in *incipient* mania; yet many writers on this subject have actually drawn such

* See Description of the Retreat, an Institution near York, for Insane Persons of the Society of Friends; containing an Account of its Origin and Progress, the Modes of Treatment, and a Statement of Cases. By Samuel Tuke. York, 1813.

a conclusion. The friends of insane patients are most loath to part with them, until means have been tried for their recovery at home; and on that account hardly ever send them to asylums, until they have completely passed through the first stage of the disease,—that stage, and that alone, which is here contended to be generally medicable. The reports, therefore, which proceed from those institutions are not to be considered really conclusive as to the power of medical treatment; since they commonly commence at that *advanced* stage of the disease where the efficacy of medicine may be said to terminate, and where every thing must be left to the moral regimen. There is yet indeed a chasm both in the *early* history and treatment of mania; and the man who can supply it, will deserve and receive the gratitude of his fellow-creatures. As the Retreat is among the best institutions existing for insane persons, I could wish, that its humane and enlightened conductors, in particular, would closely direct their attention to patients *recently* afflicted with mania, when such are admitted; for my observation certainly induces me to believe, that *medical* treatment, *at an early period,* is far more efficacious than the ingenious Tuke has been led to suppose. But as this opinion is entirely deduced from the *incipient* cases which have now and then occurred in my private practice, it is offered with all the deference which becomes a comparatively limited experience in this disease. It was deposed by the late Dr. Willis,

that *nine persons out of ten recovered,* who had been placed under his care, *within three months after the attack of the disorder*; and who can for a moment doubt so respectable a man, and so eminent a physician? His deposition speaks volumes in favor of a proper treatment in the incipient stage of mania; and I cannot but express a most earnest wish, that it may be in the perpetual recollection of all those who are intrusted with lunatics.

PECULIAR DISORDER OF DRUNKARDS, ETC.

There is an interesting disease, which follows intoxication, and as it forms a sort of connecting link between mania and fever, and as it has been frequently presented to my observation, I shall now offer a few summary remarks, relative to its nature and cure. It is well known that a simple fever is frequently produced by intoxication, short stages of oppression, excitement, and collapse succeeding each other after the debauch: they are generally so mild as to terminate spontaneously, without immediate prejudice to health; but sometimes medical assistance is required, to prevent their assuming a threatening aspect. In other instances, intoxication has a more powerful influence, and leads to inflammations in some of the vital organs; or occasions venous congestions, which are not followed either by high or regular excitement of the arteries. The disorder in question is generally of the last mentioned

kind, for it seems to be accompanied with partial congestions of the brain and liver, from which, together with nervous irritation, it perhaps derives most of its peculiar characters.

This disease most frequently occurs in *habitual* drunkards, and especially when, after repeated fits of intoxication, they suddenly lessen or leave off their ordinary stimulus for a time. The first feelings of indisposition are lassitude, indistinct chills, loathing of food, uneasiness in the head, disturbed short slumbers, anxious countenance, and oppression at the pit of the stomach; and these are followed by retching or vomiting, white moist tongue, wildness and quickness of the look, weak rapid pulse, general irritability, watchfulness, tremors of the hands, and dampness of the skin increased by the slightest exercise. Confusion of mind, or forgetfulness supervenes, which passes on to a state closely resembling mania. The patients suppose that their affairs are ruined; or that certain persons have conspired to poison or shoot them; or that their friends have deceived or deserted them; or that they are confined against their inclination in a strange place. Occasionally they imagine that they see frightful objects, the impressions of which are so forcible, that they call loudly for assistance to drive them away. At other times, they declare that vermin are crawling over the bed or about their clothes; or that bright or dark spots are floating in the atmosphere; sometimes they fancy that

they hear remarkable noises in the room or at a distance; and in other examples, alternately listen and speak, as if they were conversing with one that was present. They are often intent upon calculations, buildings, projections, counting or picking up money, settling accounts, or some such imaginary employment; and if you attempt to address them, they will either unheedingly pursue their occupation, or abruptly tell you that they must not be interrupted. In short, they are either earnestly engaged with business immediately before them, or their attention is wholly engrossed by conspiracies, suspicions, dangers, or the like; and it is remarkable to observe, how the expressions of the countenance vary, according to the nature of the predominant impressions. If the patients be flatly contradicted, they are mostly very pertinacious in their opinions, and easily excited into passion; but if they be soothingly dealt with, they will now and then answer certain questions mildly, and even distinctly; nevertheless, if many interrogations be put to them in succession, they grow confused, and relapse into their former incoherence. Sometimes they mistake the names of things, or the pronunciation of words; and although they generally recognize most of their acquaintances, they load some of them with abuse on trivial occasions, and request the friendly interference of others.

Most of the symptoms enumerated continue from four to ten days, but cases less immediately urgent

may be considerably more protracted. Some examples, indeed, which occurred to me existed, from first to last, nearly six weeks, and two assumed the character of confirmed madness, which were finally cured; so that there can be no question but this disorder may identify itself with the true mania, in peculiar subjects. When convalescence is not restored within the first month, there will be a risk of long continued, if not permanent, alienation of mind; as the most strongly marked cases terminate successfully or mortally before that period. If a tranquil and long sleep can be procured in the commencement of the disease, recovery will commonly follow apace; although I once lost a patient unexpectedly in convulsions, after he awoke from an apparently quiet sleep of six hours. Indications of coma or convulsions; perpetual watchfulness; excessive irritation; violent and often renewed struggles; very rapid and thready pulse; frequent vomiting; extremely cold skin; subsultus tendinum; and especially small contracted pupils, with a degree of strabismus, are among the most unfavorable signs. Those patients who have been driven to intoxication from some great affliction, are generally in imminent danger; for during the progress of the complaint, their raving incessantly turns upon the recent calamity, and produces an irritation and exhaustion most difficult to be counteracted. But confirmed drunkards, who have previously laboured under chronic hepatitis, or some similar organic affection, perhaps stand the

worst chance; at least I have seen two subjects of this kind, who sank rapidly under this disease.

In all I have attended forty cases of this disease, and out of the first sixteen, four proved fatal, but only three out of the remaining twenty-four; the greater success in the latter having appeared to me chiefly to depend upon some differences made in the method of treatment. No more than two opportunities have occurred to me of examining the bodies of patients after death; and in both of these, slight congestions were found in the brain and liver, while the other viscera appeared natural. Yet I have known apoplexy terminate fatally, without more decided evidences of derangement having been exhibited by dissection; and it is an established fact, that in some subjects very moderate congestions of the brain will extinguish life. This disease invariably occurs during the existence of that general collapse which succeeds intoxication, when the tone of the heart and arteries is diminished, and when the venous system must consequently be more or less in a state of congestion; and of this congestion the brain more especially appears to participate,—as may be inferred from the great uneasiness early felt in the head, the tremors of the hands, the subsequent derangement of mind, the occasional supervention of coma or convulsions, and the appearances on dissection. Yet the sense of load, which occurs at the commencement about the epigastrium, the dark unnatural

colour of the stools, and the two morbid examinations before noticed, render it probable, that the liver is also usually affected. While it is equally evident, that the tone of the stomach is greatly impaired, and the functions of the skin much disordered on the first attack; and though, during the progress of the disease, the stomach generally acquires the power of retaining whatever may be exhibited, the skin continues moist and relaxed. The peculiarly irritable state of the nerves induced by previous habits, the collapse of the system at the time of sickening, the venous congestions, and the subsequent efforts of arterial re-action, all tend to produce and modify the phenomena of this disease.

In very confirmed, old, or enervated drunkards, the general collapse of the system, at the time of the attack, seems to prevent the developement of any thing like an equable excitement; and we find the heat of the surface in that fluctuating or partial state, which often attends congestive fevers of the irregular kind. But in young or vigorous men, who have not been long or regularly accustomed to inebriation, sometimes a stage of general though imperfect excitement follows that of oppression; and these different characters of the disease, as modified by peculiarity of constitution, should always be borne in mind, for they require correspondent variations in the treatment. In debilitated and habitual drunkards, for instance, I have invariably seen blood-letting

prejudicial even at the onset; and though mild purgatives are at that period beneficial, they cannot be safely exhibited at an advanced stage. On the contrary, in constitutions that have not been shaken by reiterated drunkenness, I have known early and moderate venesection of much use, especially when followed by active aperients. For a long time I firmly believed, that depletion was always dangerous in this disease; but as I had imbibed this prejudice from having witnessed its injurious effects in the advanced stages, so it has been removed, by my having since seen it beneficial in the beginning of numerous cases. Yet I am fully persuaded, that there are not many instances where the lancet is really requisite; and also, that there are few where purgatives should be omitted in the commencement. On account of former habitudes, patients must generally be allowed a limited quantity of diffusible stimulus, but particularly those who have long been hard drinkers; since it is to them what ordinary food is to temperate persons,—it cannot be abstracted for any length of time without exhaustion being induced: indeed, when judiciously administered in this disease, it is often highly serviceable in allaying irritation, and communicating an energy to the heart and arteries, by which the equilibrium of the circulation may be ultimately restored. But as these are merely desultory hints, a summary and connected plan of the treatment shall be delivered.

In the first stage of this disease, the former mode of life, and the present condition of the patient, must be accurately investigated. If it should happen, that he has long been addicted to the free use of spirituous or vinous liquors; that the pulse is weak, and the face very pale; that the surface is clammy and cool, or in a variable and irregular state as to temperature; and that there are strong signs of muscular relaxation,—why then all thoughts of venesection must be abandoned, even at the beginning. The abstraction of blood, under these circumstances, would only increase the venous congestion, by further diminishing the force of the heart and arteries; and would be almost as reprehensible as in the last stage of the simple or congestive typhus. In such cases, the bowels should first be opened by moderate doses of calomel, jalap, and the sulphate of magnesia; care being always taken to support the strength under their operation, by an occasional draught of warm negus. When the bowels have been sufficiently evacuated, about two or three gallons of tepid water, strongly impregnated with salt, should be dashed over the whole skin, which ought to be immediately dried, and well rubbed with warm flannels. After this operation, the patient should be put to bed, and about forty or fifty drops of the tincture of opium exhibited in a little warm wine, and repeated at the interval of two or three hours, provided sleep be not in the mean time procured. This treatment will occasionally restore the patient without any

other means; but as in a large majority of cases, it only alleviates the symptoms, it will generally be requisite to follow it up by repeated doses of calomel and opium, which, together with the use of the tepid affusions, will rarely fail. Three or four grains of calomel with a grain and a half of opium, every six or eight hours, will be sufficient doses of these medicines on the first day of their administration; and after that period it will commonly be better to lessen the quantity of the opium: and as soon as the action of the calomel is at all developed on the gums or salivary glands, it should be entirely omitted, as its effects, for the most part, continue to increase for a few days afterwards. The tepid affusions may be used three or four times in the twenty-four hours, if the patient should be very furious or restless, but in general twice will suffice in that term. If the water be well impregnated with salt, the skin properly rubbed, and the opiate exhibited in warm wine after their application, a tendency to quietness or sleep most frequently succeeds; nay, there will not only be a diminution of the nervous irritation, but likewise an improvement in the state both of the pulse and the skin. If under these measures the bowels should not be daily moved, some mild aperient, such as castor oil, may be occasionally exhibited; but as weak and habitual drunkards cannot long bear even moderate evacuations without prejudice, laxative enemata should generally be substituted after the fourth or fifth day.

The exhibition of diffusible stimuli must be regulated, first by the preceding habits, secondly by the effect produced, and thirdly by the quantity of opium administered. A little of their usual beverage must be given now and then to habitual drunkards; and if it should be found to lessen the frequency of the pulse, the general irritation, and the tremors of the hands, we have certain tests of its utility; but if it should quicken the pulse, augment the irritation, and increase the tremors of the hands, it must be omitted, and malt liquor substituted. By reason of such patients having been long accustomed to stimulation, they can bear larger and more frequent doses of opium than ordinary persons; and when it is freely exhibited, it will seldom be necessary to give much wine or spirits, even to the hardest drinkers. At the same time, as the leading object of the administration of this drug is to remove irritation, and induce sleep, its effects should be assiduously noted, that it may not be too liberally given. However efficacious opium may be under judicious management, I have seen and heard enough to be fully convinced, that it is a very perilous practice to administer it in too large and repeated doses, since apoplexy, coma, or convulsions, may be thereby produced.

When this disease occurs in tolerably robust subjects, who have been addicted only to occasional intoxication, purgatives must be more liberally prescribed, during the first two or three days in particular,

than in habitual and enfeebled drunkards; and though in the latter, opium may often be given with advantage at an early period, yet in the former, experience has taught me, that it should hardly ever be exhibited, until the bowels have been freely and frequently evacuated. If I had sooner known the necessity of this precaution, I believe that my success would have been greater; but as I fell into the error of administering opium indiscriminately in every stage and variety of this complaint, I am most anxious that it may be corrected here, for the sake of others. Even in *habitual* drunkards, I am quite confident, that it is always best, in the beginning of the disease, to open the bowels before the exhibition of opium; and to *occasional* drunkards, this observation may be extended with increased force, since in them the purgatives must be employed, not only at the onset, but during the progress of the distemper. In such persons, I mean occasional drunkards, it has been customary with me for some time, to use purgatives and the tepid affusions in the day, and calomel and opium in the night; and this plan, combined with a light diet, has rarely failed of success. In some few instances of this nature, I have known venesection requisite soon after the first seizure, when the brain appeared more than usually disordered by venous congestion, or arterial determination; but rarely more than eight or ten ounces were abstracted at once, and the operation never repeated beyond the second time. So far as I have observed, blisters are

hurtful in every stage and modification of this disease: by increasing both the nervous irritation and the fever, they make the patient more restless and watchful, and thus exhaust his strength.

In occasional as well as in habitual drunkards, purgatives must be limited to the early periods of the disease; because they are most pernicious in the advanced stages, to which opium and calomel are most suitable; the one to allay irritation, and the other to equalize the circulation. Habitual generally require larger doses of opium than occasional drunkards; and wine is commonly the best cordial for the first, and good malt liquor for the last. The advanced stages of this disease are generally marked by a small and excessively rapid pulse; cold as well as clammy skin; imperfect utterance; low muttering delirium; or sudden, short fits of phrensy followed by heaviness and insensibility; startings of the tendons; a frequently stretched out and very tremulous hand; a want of correspondence in the pupils; general prostration of muscular power; and difficulty of deglutition. When several of these symptoms are united in any instance, every species of depletion is of course out of the question; indeed that is generally the case when the worst forms of this disease have existed several days; and therefore the time of their continuance should always be precisely ascertained, before the practitioner ventures to prescribe. Under the most unpromising appearances, a combi-

nation of calomel and opium will sometimes succeed; and whenever there is ground for doubting the propriety of evacuations, it should be administered in preference to every other expedient. If it should be asked, how it is conceived that opium operates in this disease, I confess myself incompetent to give a full or satisfactory answer, and could only say of it, as Cicero said of two other medicines :—*Quid scammoneæ radix ad purgandum, quid aristolochia ad morsus serpentum possit, video; quod satis est: cur possit, nescio.** It is truly remarkable, that one of the patients whom I attended was a female, who had long been in the habit of taking opium to a great extent, and who was attacked with this disorder on suddenly lessening the doses of her favorite drug. An universal collapse was the first effect, and that was succeeded by irritability of the stomach, dampness of the skin, tremors of the hands, pain in the head, watchfulness, and wandering of the mind. It appears that when, in a state of health, the energy of the constitution has been sustained by diffusible stimuli, their sudden abstraction or diminution so reduces the tone of the heart and the arteries, that they cannot maintain the natural equilibrium of the circulation; and that consequently there is an unusual accumulation of blood in the veins, by which the system is

* De Divinatione lib. prim. pag. 11. M. Tullii Ciceronis Opera, cum Delectu Commentariorum. Edebat Josephus Olivetus, Academiæ Gallicæ XL Vir. Tomus tertius. qui Philosophicorum alter. Editio tertia, emendatissima. Genevæ, apud Fratres Cramer. M.DCC.LVIII.

either oppressed, or roused into certain degrees of re-action, according to its condition at the time. Agreeably to this view we find, that those persons who freely indulge in the use of opium or strong liquors, are very liable to congestive and inflammatory diseases, and also to venous hemorrhages. It would lead me too far from my present subject, to point out the various effects of venous congestions; but I may observe by the way, that what are denominated passive hemorrhages, and one class of dropsical diseases,* are chiefly dependent upon them. In many diseases, which are supposed to arise from pure debility, the venous system is overloaded with blood, while the action of the heart, and of the whole arterial circle is diminished in force, though it may be increased in frequency; and this loss of balance seems always to take place in the first stage of the disease of drunkards here considered, nor does the circulation appear to be perfectly equalized, at any period of its progress.

For this peculiar complaint there is yet one remedy which I have omitted to mention, that it might be made more prominent by standing alone. Perhaps few practitioners would *a priori* suppose, that the cold affusions could be safely, much less advan-

* There are three classes of dropsies,—one proceeding from local obstruction,—one from an increased action in the capillary arteries,—and another from venous congestion: in discussing the scarlet fever, I have endeavoured to illustrate these, as they are frequently the sequelæ of that disorder.

tageously, employed in such an affection; and yet this is actually the case, as can be proved by the most indisputable evidence. About three years ago, my friend Dr. Ramsay, of Newcastle-upon-Tyne, mentioned to me, that he had frequently applied the cold affusions with much benefit in the early stages of the brain-fever of drunkards, when the surface was covered with sweat. Resting confidently upon his recommendation, I determined to try this treatment, as favorable occasions offered. The first patient on whom it was applied was an athletic young man, who had lately drunk very hard, and who had only been ill a few days. About three gallons of cold salt water were dashed forcibly over his naked body, while he was in a state of profuse perspiration. Before the employment of this measure, he had been extremely furious, but after it, he became quite tractable, went to bed, and had some tolerably quiet sleep. The symptoms returned on the following day, and the cold affusion was again applied, with the same result as before; and from this period the recovery was rapid:—nor were any other means used, except an occasional opiate and purgative, with a little wine, and light nutritious soup. The second patient who underwent this practice was also a strong young man, though his case materially differed, in some respects, from the former. After a severe course of drinking, he was attacked with an inflammatory disease, which required purgatives and the antiphlogistic regimen for its removal. During his

convalescence, his friends thought him rather eccentric in his manner; and though no positive disorder of mind could be detected for two or three weeks, it soon became quite apparent after he commenced his ordinary business. His memory was observed to be very defective, and he seemed in a perpetual bustle; he contracted for a house with one person, for a ship with another, and was not more restless during the day than watchful at nights. When I was first requested to visit him, the mental derangement had been obvious for three or four days: on my entering the room, he came forward, shook me heartily by the hand, declared he was glad to see me, and appeared to be in high spirits. The skin was bathed in sweat, his tongue moist, his pulse quick, and the hands slightly tremulous. As I was proceeding to ask him some questions, he suddenly interrupted me, and said that as he expected letters of importance by the post, he knew that I would readily excuse him. His wife endeavoured to detain him, but he burst into a violent passion, and, forcing the door open, immediately left the house. Some acquaintances were shortly sent after him, but he had rambled so rapidly from place to place, that it was several hours before he could be found. On the first opportunity which offered, the cold affusion was tried, and it calmed the patient exceedingly:—it was repeated two or three times afterwards, and proved so highly beneficial, that merely an occasional aperient and opiate were necessary to complete the cure. In little more than a

week from the commencement of my attendance, this man was correct in his mind, and has since continued well in all respects.

Without reporting more cases, it may be added, that I have never used the cold affusions but at an early period of this disease, and on those patients who appeared to have much constitutional vigour; and that I have not only given warm wine and water immediately before and after their application, but dried and rubbed the skin well with warm flannels, by way of supporting the *vis vitæ*, and insuring sufficient re-action. In all cases of a suspicious nature, I have invariably preferred the tepid affusions, but have found that they require to be followed by purgatives and opiates, or by opiates and calomel. It has been already stated, that I received the first hint of the utility of the cold affusions from Dr. Ramsay, whose professional eminence and private worth are a sufficient sanction for any practice that he might recommend. Yet as a further testimony in favor of this method of treatment, it may be mentioned, that Mr. Gregson, of Sunderland, without any knowledge of what Dr. Ramsay had done, has long been in the habit of occasionally using the cold affusions in the earlier stages of this disorder: his general practice, too, so far accords with mine, that he has sometimes found small or moderate bleedings useful on the first attack, at which time he never fails to give purga-

tives, and afterwards uniformly exhibits small and repeated doses of calomel with opium.*

This disease is certainly to be considered as a strictly febrile one, and the practice above mentioned seems at direct variance with the beautiful principles of Dr. Currie; for it is unquestionable, that the cold affusions may be successfully employed in it, when the skin is covered with perspiration, and either cool or of an unsteady heat. In every instance where I have seen this application used in the disorder in question, the conditions of the pulse and skin have been improved by it, and the general irritation greatly diminished. We know very well, that the operation of many remedial agents is much influenced by the state of the system at the time of their administration; and it is probably the extreme nervous irritation, so constantly attendant on this complaint, that enables the system to bear with advantage an application which seems to be prohibited, if we permit ourselves to be solely guided by the degrees of perspiration and heat. It is one of the most common mistakes of medical inquirers, to generalize from too scanty an accumulation of facts; and thus truth and error, like light and shade, are found blended together in the most distinguished works.

* In No. 52 of the Edinburgh Medical Journal Dr. Wood of Newcastle recommends the free application of cold wet cloths to the head; and as his experience has been extensive in this disease, his recommendation is deserving of particular notice.

Having always found coercion most prejudicial in this disease, I have invariably allowed patients as much liberty as was compatible with their situation; and having seen that contradiction often highly increased their watchfulness and irritation, it has also been my aim to soothe them by address and conciliation. Guided by these principles, I have in several instances permitted them to walk abroad at their own request; and sometimes the influence of a cool atmosphere, united to that of compliance, has been useful in procuring rest. One man was allowed to go nearly a mile to look at the sea in a bleak evening, and soon after he returned he fell into a sound sleep, and was convalescent the next day; another walked about in a large apartment, when the weather was cold, with nothing but his shirt on for more than two hours, and afterwards went to bed of his own accord, and passing a quiet night, from that time recovered apace. In this disease, as in mania, the circulation is always thrown into much disorder by fasting, and therefore regular supplies of light food are necessary, which, like the other expedients recommended, will be found to allay the general turbulence of the system.

So little has been observed respecting the foregoing affection, that it has not yet obtained a place in our systems of physic; and there can be little doubt but it is still often confounded in practice with the ordinary mania and phrenitis. In 1801, Dr. Samuel

Burton Pearson published an account of it, in a very small tract, which had only a local circulation; and it was to it that I was first indebted for some useful information regarding its character and cure. But it is well known, that the late Dr. Young, of Newcastle-upon-Tyne, treated it by opium long before Dr. Samuel Burton Pearson resided there; and though those two physicians were afterwards intimate friends, yet the latter never alluded to the former in his pamphlet. Desirous to awaken the attention of the faculty to this disorder, I published a short paper relative to it in 1812, and soon afterwards a reprint of Dr. Samuel Burton Pearson's original tract appeared, to which several additional observations were attached: some of those observations, however, seem rather the effusions of fancy, than the deliberations of judgment; and the most extraordinary success, which this author records from opium, has not been confirmed by any practitioners of my acquaintance. In the following year, seemingly without any knowledge of what had been previously written, Dr. Sutton favored the world with an excellent work on this disease,* and although he also speaks highly of opium, yet he candidly acknowledges, that he lost four patients out of twenty-two,—an average loss not materially different from mine.

* See Tracts on Delirium Tremens, &c. By Thomas Sutton, M. D. London, 1813.

Among the ancient writers, I know of none who has described any thing like this complaint, with the exception of Hippocrates; and it certainly does seem to me that there are four or five cases in his Epidemics, in which many of its leading signs are specified; one in particular may be mentioned, and that is the case of Chærion in the third book. If it be objected, that tremor of the hands is not enumerated among the symptoms, it may be answered, that this though a general is not an universal concomitant: three cases have occurred in my practice in which it was absent, and these perhaps render doubtful the propriety of the name which Dr. Sutton has imposed. We require, in fact, to be more fully acquainted with the nature of the disease, before we can give it a correct designation; and it affords a subject well worthy of the most serious investigation. The remarks which I have hazarded were indeed drawn from my own experience, but they rather form materials for inquiry, than a substantial basis for the pathology and treatment of so curious an affection.

If former habits, and existing peculiarities, require so material a modification in the treatment of one febrile disease, it may be reasonably asked if they should not be taken into account in every other? That they should, certainly does not admit of the least dispute; for, however accurately general principles may be laid down, circumstances will occur in

individuals to render a deviation from them an imperious duty. Few cases of typhus have been presented to me in confirmed drunkards, but in those few the period proper for evacuations rapidly passed away, and what are called the nervous symptoms appeared much sooner than ordinary; and I have remarked, that whenever such persons are attacked with inflammation, the stage of excitement speedily gives way to that of universal collapse. In them, therefore, there is less time allowed than common for depletion, and even in that time the depletion requires to be carefully made: purging may then be freely employed, but they can neither bear copious nor repeated abstractions of blood, though small or moderate ones are frequently very beneficial. Since I became fully acquainted with the great efficacy of calomel and opium, I have successfully applied this combination to such subjects labouring under congestive or inflammatory disorders; and I can confidently recommend it as an excellent remedy in most of those dubious cases, where evacuations cannot be pushed beyond a certain point, without immediate prejudice or danger. Nearly two years ago, I was consulted in the case of an old and enervated wine bibber, who was severely afflicted with the gout in both feet and hands; and, besides, symptoms of hepatitis evidently existed. His skin was hot, the tongue very foul, the breathing anxious, and the pulse weak as well as quick; he retched a great

deal, could not bear pressure under the right hypochondrium, was much exhausted, and occasionally wandered in his mind. In this instance, bleeding appeared to me entirely inadmissible; and instead of it, therefore, I prescribed large doses of calomel with moderate ones of opium, applied a blister over the region of the liver, and kept the bowels open by castor oil and injections. As soon as the mouth became decidedly sore, all the gouty pains ceased; and by a perseverance in purgatives and alteratives, with light support, the patient ultimately did well. But as there are other causes beside drunkenness which may modify the treatment of febrile affections, it will not be amiss briefly to allude to some of them here.

Between young and aged subjects a striking difference exists, relative to their capability of bearing determinate losses of blood. In the former, when large quantities have been drawn in a short period, the energies of the system, if the disease be removed, soon restore the strength,—but in the latter, the same treatment, even if it removed the disease for which it was adopted, would not unfrequently produce an irretrievable debility, the system, for want of innate energy, not being able to renovate again; and therefore, in contagious fevers especially, aged should never be depleted so much as young people. It is a common opinion, that the inhabitants of very populous towns do not bear large and repeated evacua-

tions in fevers, so well as those who live in the thinly peopled districts of the country. Although this notion has been much too strongly insisted upon by some practitioners of the metropolis, yet it confessedly ought not to be disregarded, as idiopathic fevers in particular are liable to be modified by the places and constitutions in which they appear. In large crowded cities, where manufactories and commerce flourish, many of the lower orders of society are not only excluded from invigorating exercises in the open air, but they are likewise more dissipated and irregular in their habits, than similar classes of people, who follow agricultural employments. Moreover, among the former, there is at once greater luxury and greater want; for they sometimes live whole days together on highly stimulating aliments and drinks, and, having expended their earnings, are for a time often almost starving for want of the common necessaries of life. The extremes of excitement and depression, which such irregularities produce, doubtless have considerable influence on the habit. When such people, therefore, are attacked by contagious fevers, they cannot bear very large nor frequent evacuations of blood, nor long suffer with safety an entire abstraction of nutritious food, or moderate stimulants. As the greater part of them, too, live in narrow, low, stifling apartments, the re-action of the heart and arteries is seldom excessive; and the fever frequently assumes the type of the less urgent forms of the con-

gestive variety: on the contrary, in the fresh, pure air, and among the robust and temperate inhabitants of the country, there is a freer developement of excitement, and the fever commonly puts on the simple or the inflammatory character. Readily admitting, then, that there is often a marked difference between the same species of fever in a confined and in an open place, in a vigorous and in a comparatively enfeebled system, still this difference does not militate, as some have contended, against the general principles of early depletion in acute fevers; since it merely requires, that they should in some degree be modified in their application, instead of being entirely abandoned. It was degrading to science, and shocking to humanity, to witness the practice which once existed in some of the metropolitan hospitals, where typhous patients had no sooner entered, than they were crammed with bark and wine, to prevent, as was strangely imagined, debility or putrescency; conditions of the system which those very means tended eventually to produce in the last stages, by their excessive stimulation in the first. But happily this treatment is now falling into deserved neglect even in such institutions, where the antiphlogistic mode of cure is more generally adopted in the beginning of all febrile disorders.

But notwithstanding the improvements which have taken place in the practice of physic, there is

still far too general a dread of the lancet in what are designated idiopathic fevers, particularly when they proceed from contagion. Many practitioners are too apt to avail themselves of circumstances like those mentioned above, as pretences for avoiding venesection, when it ought to be promptly and moderately employed. The cooling mode of treatment has lessened in modern times the frequency of the putrid appearances, which were once so common when patients were confined in close and warm apartments; and the introduction of the purgative plan, by Dr. James Hamilton, senior, has yet more effectually tended to diminish the number of malignant cases. But if to these two methods, that of blood-letting was more frequently added at the commencement, we should hardly ever witness that horrible train of symptoms, which still attends the last stage of some of our contagious fevers, when treated in the ordinary way. Unfortunately, the early periods of such disorders have been greatly neglected by many authors of eminence, while their attention has been closely directed to the phenomena of the advanced stages, which are invariably nothing more than the results of the morbid actions of the first. This has been and is still one great cause of error both in speculation and practice. Remarkable as it may appear, the fevers now accounted the most putrid or malignant in our systems of physic, are those which absolutely require the most vigorous measures in the onset; because

they are at first attended with the most highly inflammatory or congestive symptoms, according to the degrees of which is the putrescency or malignity of the last stage. Cut short the inflammatory or congestive symptoms in the beginning, and nothing putrid or malignant will be seen;—allow them to advance uninterruptedly, and then come, as their effects, those appalling indications of putrescency or malignity, about which too much has been written, and too little understood. As an incontrovertible corroboration of these doctrines, I could prove from my own experience, that what has been termed the malignant scarlet fever, is a highly inflammatory or congestive disease, requiring a similar treatment to the inflammatory or congestive typhus:—but the numerous facts collected, with regard to that subject, have been published in a recent work. If there is any point which I would more earnestly impress upon the mind of the practitioner than another, it is this,—that in the treatment of all acute fevers, it will be found the best general rule *to attack the leading symptoms as soon as ever they appear.* We too often allow ourselves to be embarrassed by unfounded fears, concerning the sedative effects of contagion, or by abstract speculations about proximate causes, until the most precious moments for efficient action are entirely lost, and the unresisted disease has sapped and shaken the very citadel of existence. We shall have more distinct conceptions of all febrile diseases, when

the primary symptoms, as they deservedly ought, are made the most important as well as the most conspicuous; and we shall then fully perceive the dangers of delay, and learn rightly to estimate the power of promptitude and decision.

It has long forcibly struck me, that the practices recommended in the preceding pages for typhus, might be advantageously applied to the various modifications of the plague; and, independent of the pathological remarks before made respecting that disease, I could adduce many facts from experienced authors, which would strongly support this opinion. But as this would lead me into a long discussion, and as I am not able to speak positively to the point from actual observation, I must satisfy myself with committing the hints which have been thrown out, to the candid consideration of those who may be called to practise where that disease prevails. If the suggestion of so humble an individual as myself were deserving of notice, I would earnestly recommend, that the British Government should form a society for the express purpose of investigating the prevention, nature, and treatment of the plague; or, not being deemed expedient as a state measure, that it should be established by public contribution. Such an institution would be worthy of the country which extends its genius and benevolence to all parts of the world; and the remembrance of

it might remain with posterity, when our national greatness and glory shall have passed away, like those of Greece and Rome. Through it perhaps another Jenner might be found to disarm even this human scourge of its virulence; or if it did not lead to so great a discovery, at least the morbid derangements which the plague induces in the vital organs might be more extensively ascertained, and the power of an early and active treatment put to a fair and full trial. In the ordinary treatment of this disease, it is clear that the means are not at all fitted to the end proposed. There is no natural relation between the inertness of the remedies, and the violence of the symptoms. We might as consistently attempt to stop an impetuous avalanche by a common reed, as to arrest the worst forms of the plague by mere palliatives. The dissections upon record, collectively taken, indicate decidedly, that visceral inflammations or congestions are the causes of death; and when we have found other visceral inflammations and congestions yield to judicious measures, shall we continue to deem those of the plague alone incurable? Shall we still supinely view this disease, like the superstitious Mahometans, as if it were beyond the reach of human power? Shall we still persist in lulling ourselves into a fatal delusion, by believing that nothing can be done, but to palliate the symptoms? It is surely unworthy of the enlightened age in which

we live, to profess that the violence of any disorder is a sufficient reason for not attempting effectually to arrest its progress: such a notion is only calculated to deaden the best sensibilities of our nature, and to extinguish that ardour of investigation which this, like many other subjects in medicine, most imperiously demands. It is in the beginning of highly acute fevers, probably not excepting the plague itself, that time is of such inestimable value; for there are then truly critical moments, which, if promptly seized, and judiciously employed, enable the practitioner to control the most untoward symptoms, and to prove that the medical art, with all its imperfections, is possessed of the most extraordinary powers. But if by any chance this golden opportunity be lost, the best directed efforts will generally fail to check the ravages of such disorders, which gather force as they proceed, and soon become uncontrollable, by causing irreparable derangement of function and structure. If the plague has hitherto proved generally destructive, it is probably not because it is in itself actually irremediable, but because proper expedients have not been opportunely applied.

It were an easy matter to shew, that the principles laid down are fairly applicable to more diseases than have yet been discussed; for in the strict investigation of those diseases, we shall find, that

the states of the vital organs are analogous in all, though the causes and the external symptoms be exceedingly various. But the further elucidation of the doctrine of a simple, an inflammatory, and a congestive variety of acute complaints has been reserved for another work; and if in the mean time the present pages should at all tend to the improvement of medical practice, my labours will be most amply rewarded.

THE END.

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